

RAILWAY  
PROGRESS  
SEEN IN  
B.T.C.  
REPORT

See Page 2



"THE TIMES" OF THE TRANSPORT WORLD

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Resumption—and Thanks

IN resuming normal publication after seven weeks of enforced inactivity our first task must be to offer renewed apologies to our readers for any inconvenience they may thereby have suffered. Subscribers are reminded that the amount of their subscription will be adjusted to compensate for the interruption. The dispute in the printing industry, now terminated through the good offices of Lord Birkett, was one in which as publishers we had no part. We have had perforce to share in its burden, but our loss in revenue, though serious, will we hope in due course be recovered. It is the continuing interest of our readers that concerns us most, and in an effort to retain it we have circulated a weekly news bulletin to subscribers and others whose addresses were known to us. Appreciation of this action is to hand in a big batch of commendatory messages—apart from those received orally—and for these we hasten to express our thanks. In deference to wishes widely expressed our front page will in future contain a brief summary of outstanding news and developments on lines which have proved so popular for quick reference purposes in the bulletin.

Cohen Council's Third Report

THAT escape for the present from the inflationary spiral affords opportunity for an all-round reduction in prices is one of the suggestions in the third report of the Council on Prices, Productivity and Incomes under the chairmanship of Lord Cohen (H.M. Stationery Office, 2s.). It points out that stimulated demand would enable full advantage to be taken of modern production techniques. Proposals are surveyed, but not advocated (the Council regrets the continued absence from its deliberations of the T.U.C.), to help in the consideration of a policy "to combat the inflationary push which comes when many incomes rise faster than output." Amongst other things these proposals aim at limiting the ability of employers to grant pay increases by restricting their power to raise prices to cover them. The proposals include control of profits, direct price control, and establishment of a commission to investigate certain types of price increases and report its conclusions for public consideration. There is also the conception of a single co-ordinating body representative of employers, workers and Government to guide those concerned in individual pay negotiations, including the drawing up of a code of principles. The whole subject is left open for discussion and could well be elaborated in the fourth report of this authoritative body. Meanwhile experience in the recent printing dispute points to a method of negotiation under independent advocacy and direction which, in the absence of established machinery, may prove attractive to unions and employers generally.

Modernisation Re-appraisal

RESTRAINED optimism pervades the re-appraisal of the British Railways modernisation plan, carried out at the request of the Minister of Transport by the British Transport Commission and issued during July as a White Paper. Signed by Sir Brian Robertson, chairman of the B.T.C., it reviews the achievements of the first four years of the plan; sets out its future course, especially in the next five years, relating it to the future size of the railway system; and re-assesses the economics of modernisation in the light of these facts. The original cost of the plan was estimated in 1955 at £1,240 million, of which in any event almost half would have been needed for renewals of equipment on the existing basis. Late in 1957 the cost had risen to £1,500 million, due to rising prices and more precise evaluation of certain items, plus £160 million for additional features. Exclusive of interest on deficit advances the charge to revenue account for central charges will be £85 million a year in 1963, when a working surplus of between £50 million and £100 million (a range representing 3 per cent of annual receipts and expenses) is anticipated as a result of an analysis of probable traffics, passenger and

## CURRENT TOPICS

freight. There is thus some chance of the deficit coming to an end in that year. The re-appraisal commands considerable interest for its review of what has been done to bring the programme, as it is, ahead of schedule and what is to be tackled in the immediate future. Principal among these tasks is the acceleration of main-line electrification. Nevertheless, because of the limit to the scale of such work in terms of manufacturing resources and the availability of technical staffs, it has been decided to give top priority to the London Midland electrification between Euston, Birmingham, Liverpool and Man-

chester, aiming to complete it a few years ahead of the original plan. To make this possible, planning for the other main-line scheme using the a.c. overhead system, on the Great Northern Line out of Kings Cross, will continue, but the electrification work will not begin until considerable progress has been made on the London Midland scheme. Meanwhile the permanent way has been rebuilt and strengthened at certain places on the East Coast route, desirable in any case for high-speed running with the diesel locomotives, which are being introduced as quickly as possible. In any event the reconstruction of Kings Cross, ardently desired by the Great Northern traffic authorities as a corollary to main-line electric traction, must wait for the suburban services to be diverted into the Northern City Line tube at Finsbury Park to run to Moorgate.

### IN THE PAST SEVEN WEEKS...

ON June 26 H.M. the Queen, with President Eisenhower, formally opened the St. Lawrence Seaway. A description of this undertaking appeared in *MODERN TRANSPORT* of March 21.

The B.T.C. report for 1958 showed a deficit of £89 million; a working deficit of £48 million on B.R. and a surplus of £20 million on other activities, including £2 million on B.R.S. Leading article, page 2.

Re-appraisal of railway modernisation carried out by the B.T.C. was issued as a White Paper; acceleration of modernisation and rationalisation is advocated. Financial stability for B.R. is possible by 1963.

The 1958 London traffic census showed a 25 per cent increase in lorry traffic over 1956 and 12 per cent increase in cars. The number of buses at Hyde Park Corner fell from 7,612 to 6,328 a day.

The Committee on London Roads proposes a 20-year improvement scheme either at £6 million a year (the present rate) or £10 million; the B.R.F. deems this inadequate.

The London Travel Committee "broadly recommends" building the Victoria Line.

Leyland introduced the CS8 Comet range of freight chassis with gross ratings of 12 tons solo or 18 tons with trailer or semi-trailer.

The fifth Wickham diesel railbus for B.R. has pneumatic suspension.

The report of the M.O.T. sample survey of goods transport made in 1958 shows 56 per cent of inland freight ton-mileage to go by road compared with 46 per cent in 1952.

The B.T.C. passenger charges scheme (*MODERN TRANSPORT*, May 16) took effect from August 1.

Viscount Knollys has become chairman of the English Steel Corporation, Limited.

Mr. H. N. Edwards has been elected chairman of Metropolitan-Cammell Carriage and Wagon Co., Limited.

Sir Henry Spurrier has been re-elected chairman of Bravemana.

Mr. J. M. Birch has been re-elected chairman of the National Road Transport Federation, with Messrs. S. C. Bond and R. N. Ingram as vice-chairmen.

B.E.A. and Olympic signed a consortium agreement for air services between Britain, Greece and the Eastern Mediterranean.

We record with regret the deaths of Messrs. Walter Alexander, Senior (founder of W. Alexander and Sons, Limited), R. T. Brown (general manager, West Monmouthshire Omnibus Board), James Bullock (of B. & S. bus services in South Yorkshire), Christopher Dodson (bodybuilder and founder of principal constituent of Southern Vectis Omnibus Co., Limited) and Sir Ronald Matthews (chairman, L.N.E.R., 1938-48).

throughout to act as good employers should act." It is certainly a matter for regret that one railway union (the N.U.R.) has decided to withdraw from the joint consultation procedure to which the Commission attaches over-riding importance.

### Degreasing Processes

METAL degreasing may be a mundane phrase, but it is a key process in the engineering industry. The art or science of removing grease from metal involves considerable research, with laboratories and workshops dedicated to the task of evolving the most rapid and efficient methods of removing grease. The first point will be clear to all who know that almost all metal articles have to be degreased at least once during manufacture. That concerning research and development may be less widely appreciated; it centres upon the story of trichloroethylene, a vapour solvent first pioneered by Imperial Chemical Industries 30 years ago. Today trichloroethylene degreasing plants are found in every branch of engineering; they range from bench models to giants capable of handling steel tubes 50 ft. in length. Plants vary from the simple open top type to semi- and fully-automatic enclosed units with conveyor systems and ultrasonic and vibratory refinements. Some of these are capable of degreasing up to seven tons of work per gallon of solvent. Of the 20,000 plants now in service, a high percentage were designed to meet the specific requirements of the customer, and because of this and the nature of the supervisory work and safety precautions necessary with all installations, a personal service was started as far back as 1930; visits are made regularly to all users of the solvent, including those who use competitive plants. The headquarters of the Metal Degreasing Section of I.C.I. is at Runcorn, with full facilities for research, the development of prototype plant, and for demonstrating standard products to prospective users; a

recent visit left a lasting impression of its capacity and of the ability of the staff, whose latest development is Trisec—a trichloroethylene-based product for use in a modified degreasing plant for drying water-wet metal components quickly and with complete freedom from staining. Early I.C.I. progress in this field was soon arousing interest elsewhere; information was made available in 1934 to the Americans and also to I.C.I. associated companies in Canada and Australia. Expansion since the war has been considerable and virtually worldwide.

### The Countryside from Upstairs

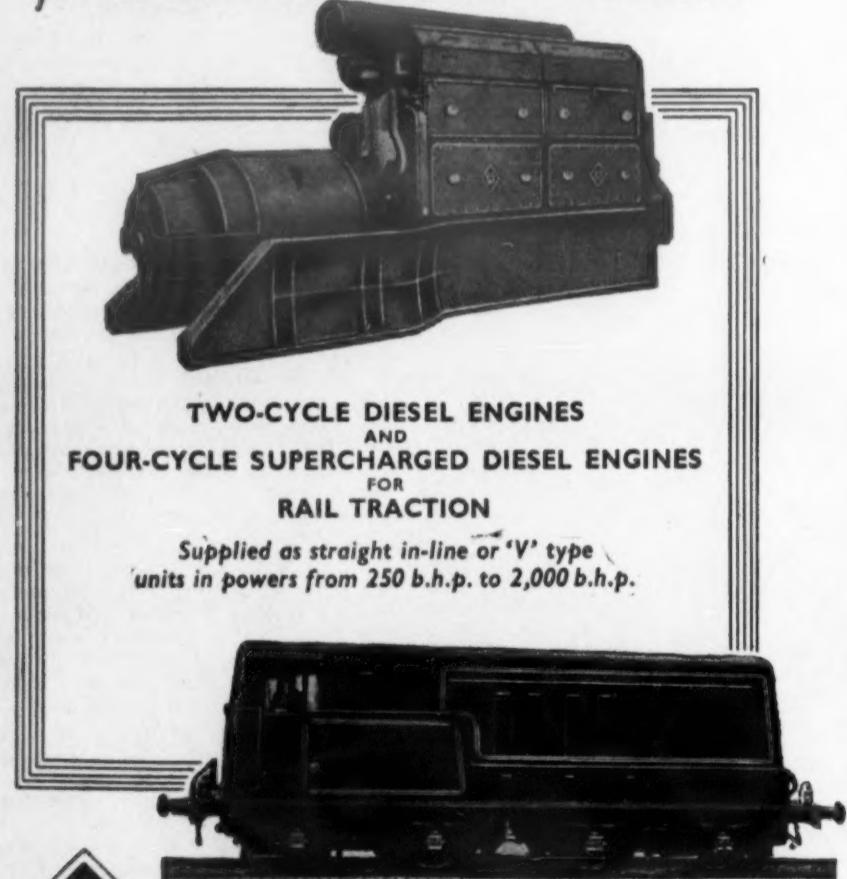
A BOLD move by Ribble Motor Services, Limited, to popularise the double-deck coach on long-distance services was announced last week. With its subsidiary, W. C. Standwick, Limited, the company plans to put a fleet of 50-seat Leyland Atlantean rear-engined double-deck coaches on services from the North-West to Scotland, London and Torquay; the prototype vehicle is described on page 7. Basically the decision to "double up" coach seating has been taken from a mounting conviction that something a little better than the conventional 41-seater is now expected on these long journeys, which to children and older people alike can become fatiguing when an 11-hour ride is common. The Ribble *Gay Hostess* class (as it has been christened), will attempt to remedy this in several directions; it will provide a light refreshment service en route, and full toilet accommodation, a comfortable, individually-adjustable seat and noise level distinctly below that of the contemporary underfloor-engined coach. Ribble thinks of this vehicle primarily as a 34-seat upper saloon affording all the foregoing attractions (the engine is, of course, less obtrusive even than in the lower saloon) coupled with a panoramic vista of the passing countryside. At a cost approaching £8,000 this class of vehicle would clearly not be economical without the additional seating capacity. It has been approved by all the traffic commissioners who have so far inspected it. Upper deck travel over medium distances has become firmly established in Ribble territory and from there the extension to longer distances seems a natural development now that improvements in suspension have been evolved. Other operators will be watching Ribble initiative with close interest.

### Blériot and After

IT has to be admitted that the race between Marble Arch in London and the Arc de Triomphe in Paris organised by the *Daily Mail* last month to mark the fiftieth anniversary on July 25 of Blériot's first flight across the Channel looked as though it might involve some danger—the death of a pedestrian during a rehearsal was most regrettable—and provide some excitement. It seemed less probable that any useful lessons would emerge. In the upshot this did the contest less than justice and, apart from all else, the achievements of most entrants went far to show how large a proportion of the round air journey time between the two capitals is taken up by formalities at either end and their effect on handling on the ground. The achievement of the Bealine Syndicate team, which won the £1,000 prize for originality using a London bus, a diesel railcar, cars, a de Havilland Comet 4B, and Paris taxicabs to attain an average time for the 13 competitors of 1 hr. 2 min., particularly emphasised this point. It is true that the effort was made on a Sunday when road congestion was likely to be less and when the Western Region could more easily find a rail-car path from Paddington to Ruislip Gardens. Nonetheless, allowing for the fact that the Comet almost halved the time of a normal scheduled flight, the time of roughly one hour made nonsense of the 3 hr. 20 min. at best or the more usual 3 hr. 40 min. from the time one reports at West London Air Terminal to emergence from the doors of the Invalides Aerogare—which is disproportionately long for a 55-min. flight.

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The Editor is prepared to consider contributions offered for publication in MODERN TRANSPORT, but intending contributors should first study the length and style of articles appearing in the paper and satisfy themselves that the topic with which they propose to deal is relevant to editorial requirements. In controversial subjects relating to all aspects of transport and traffic this newspaper offers a platform for independent comment and debate, its object being to encourage the provision of all forms of transport in the best interests of the community.

### B.T.C. Progress

THE annual report of the British Transport Commission for 1958, issued five days after the beginning of the printing stoppage, records useful progress in the modernisation plan, likely to be expedited as a result of the reappraisal submitted, soon after its publication, to the Minister of Transport. The deficit for the year was £89 million, after charging against revenue £61 million for central charges. The railway working deficit was £48 million, but the remaining activities of the Commission yielded a surplus of £20 million. The former was £21 million greater than in 1957, due mainly to a decline in coal traffic and that of the heavy industries, while the latter was £3.5 million less because of the losses accruing from the London bus strike. These disappointing but not unexpected results have to some extent been countered by the passing in December of the Transport (Borrowing Powers) Act which, while enhancing the Commission's general borrowing powers, provided for an increase in the limit of deficit borrowings from £250 to £400 million. Although the railways are operating freight traffic profitably and the loss on them is generally in respect of passenger traffic, the main reason for the railway deficit may be attributed to the effect of the continued decline in freight traffic, receipts under this head being £30 million less than in 1957. Despite higher wage rates and price levels railway working expenditure was reduced by £9 million. Railway passenger traffic, measured by passenger-miles, was the highest since the Commission took over, except for the "Suez" peak in 1957. The facilities offered to traders and the more active commercial outlook of the railways attracted favourable comment; the shipping services and the bus companies in the Tilling and Scottish groups had a relatively good year. There were notable advances in the hotels and catering services and developments at many docks and on the waterways. "Against these achievements," states the report, "there are certain major difficulties to record. The London bus strike was serious, both in itself and in its consequences. The need for economy, accentuated by the decline in some of the traffics, led to a curtailing of the less used freight and passenger services both in London and outside it."

### Organisation and Research

IN parallel with the re-shaping and re-equipping of the railways to serve the nation's present and future needs the report records revision, from top to bottom, of the whole system of traffic management. In those regions where the new traffic machinery has had time to bed down the results achieved are described as auspicious. Commercial and operating policies which formerly required the general manager's consideration can often now be co-ordinated by the area or line traffic

managers and prompt decisions taken. Recalling the considerable progress which has been made with railway modernisation, including decisions on major technical problems resulting in the placing of orders for large quantities of rolling stock, electrical and signalling equipment and new structures, the report says that the main emphasis of the next stage of modernisation is on "rationalisation." This means the development of what has been described as "a more compact network, capable of being fully utilised and of doing efficiently and cheaply the things railways are best fitted to do." The general pattern and design have, for the most part, now been settled, although there is much scope for refinements and the application of fresh scientific thought; for instance, the high voltage a.c. system of electrification offers great scope for improvement. The Commission has therefore decided to step up its research programme and has agreed in principle to the building of a new engineering research laboratory at Derby and to a substantial increase in its research establishment.

### Diesel Traction

BY the end of 1958 the number of new main-line diesel locomotives in service had more than quadrupled in the 12 months. Deliveries in 1958 were lower than originally planned. Present contracts, taking advantage of the additional capital investment made available by the Government in June, provided for delivery of 388 further main-line diesels in 1959 compared with 83 last year. British Railways, the report continues, is now "on the threshold of a new era in which whole operating areas and lines will go over from steam to diesel traction in the near future; on the principal express services between Kings Cross, Leeds, Newcastle and Edinburgh; between Edinburgh and Aberdeen; in East Anglia, where steam will be completely eliminated; on the majority of the long-distance passenger and freight workings on the Midland lines north of St. Pancras; on the whole of the former Great North of Scotland and Highland Railways north of Perth and Aberdeen, and on many of the principal passenger and freight services between London, Bristol and the West of England with all working west of Newton Abbot completely turned over to diesel traction." In London Devons Road motive power depot has for some time been a precursor of the new order. Broadly speaking, main-line diesels will replace about twice their number of steam locomotives. Experience with the main-line diesels already in service has been enough to demonstrate the great benefits that can be obtained. By the end of 1958, 2,835 steam locomotives had been withdrawn for scrapping since January, 1955, against which only 518 new engines were brought into service. The number of diesel shunting locomotives rose to 1,091 by the end of 1958. In addition to the main-line diesel locomotives, by the end of the year there were 2,400 diesel railcars in service on British Railways, not far short of twice the number operating a year earlier. Nearly 2,000 more of these are planned for the next three years and will be used to reinforce existing services where these have proved to be sufficiently profitable and to take over sections which are at present still worked by steam.

### Yards and Terminals

RATIONALISATION of older installations is proceeding concurrently with the development of new ones. Up to the end of 1958, 40 marshalling yards which had been sited by the former railway companies to suit their own flows of traffic, had been shut down and two big modern yards (at Thornton and Temple Mills) had been opened. There was substantial progress with other marshalling yards under construction, and by the end of 1958 schemes were prepared for the construction of 27 new marshalling yards. This should lead to the eventual closure of 159 older yards which are now ill-sited and poorly equipped, and substantial economies will result. Three new yards in the North Eastern Region, for example, costing in all about £10 million, should show annual savings in aggregate of over £1 million. Similar steps have been taken to reduce the number of goods terminals. Up to the end of 1958, 270 goods depots and yards had been closed. Allowing for 215,000 new wagons brought into service in the last four years alone, the total wagon stock had been reduced to a little over one million at the end of 1958, compared with 1,183,000 in 1948. The mileage of express brake-fitted trains increased to over 35 per cent of the whole. It is clearly realised that in these directions the salvation of the B.T.C. must lie.

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## RATIONALISING PLYMOUTH

### Railway Rearrangements Foreshadowed

ONE of the big rearrangements contemplated under the railway modernisation plan is now in full swing at Plymouth. When it is completed in about two years' time, the city's railways will be streamlined ready to handle traffic more economically and efficiently. An important factor is the entire dieselsification of Western Region lines west of Newton Abbot. As the reorganisation is largely a matter of ending needless overlapping between the two systems (ex-G.W.R. and ex-Southern) serving the area, a brief historical note is necessary to explain the somewhat complicated pattern.

#### History

The first railway in the city was the 4 ft. 6 in. gauge Plymouth and Dartmoor, opened between Sutton Pool at Plymouth and Princetown with horse traction in 1823. Part of its original main line and its Cattewater branch have been incorporated in the Lee Moor Tramway, still in existence. The tramway has carried no traffic during the past 10 years, but the owners, English China Clays, Lovering Pochin and Co., Limited, maintain the right of way, and British Railways still preserve the level crossing over the main line at Laira. The Plymouth Development Plan mentions the possible reopening of the tramway for gravel transport; gravel is a by-product of the clay industry, and the demand for it in the London area may not always be met locally.

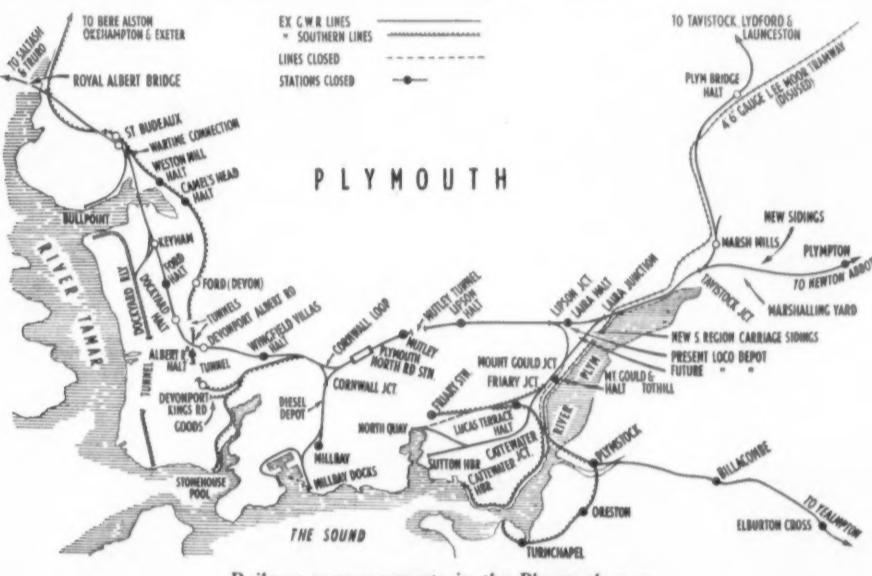
The first main line was the 7-ft. gauge South Devon Railway from Exeter via Plympton to Millbay, opened in 1849. A hundred years ago the Cornwall Railway was opened from Cornwall Junction, north of Millbay, across the Royal Albert Bridge at Saltash to Truro, and the centenary of opening the bridge by H.R.H. the Prince Consort was marked on May 1, the day before the anniversary. Also in 1859 a branch was opened from Tavistock Junction on the South Devon line to Tavistock. This was later extended via Lydford to Launceston, and when the London and South

are now seven platforms, all full-length. A new refreshment room and other buildings have already been finished on one of the island platforms and the subway has been modernised, and a new parcels depot provided. The present primitive wooden booking hall will shortly disappear; work is beginning on the foundations of the main station block. Several storeys high, this will house the administrative offices still at Millbay as well as give the Plymouth public better waiting-room, cloakroom and other accommodation than has so far been seen at any station in the city. Also at North Road, or Plymouth as it is now officially called, a large new signalbox has been built. This will later on replace all the present boxes between Lipson Vale Junction and Keyham, inclusive.

#### Marshalling Yard

An incidental to the rebuilding of North Road on an extended site is the removal of the engineering and signalling departments to a new depot at Devonport Albert Road. The workshops, stores and offices were first used on January 1. On December 8 last year, a small ceremony was held to mark the extension of Tavistock Junction marshalling yard. There are eight additional sidings, capable of holding 500 wagons, and also a new amenity and office block. A further addition is a second departure line for up goods trains. Hitherto it has been difficult to dispatch two in quick succession. The trains are let out of the departure roads on to the main line by Plympton. Tavistock Junction is now the only goods marshalling yard in the area and handles about 8,000 wagons a week. Previously a total of about 12,000 were handled here and at Laira marshalling yard, many being re-sorted at both yards.

New carriage sidings for Southern Region passenger stock have been built on the site of the Laira yard. These will be opened shortly, after which Southern Region passenger trains will not proceed beyond Mount Gould Junction. At present they are still going to Friary, though since that



Railway rearrangements in the Plymouth area

Western Railway reached Plymouth in 1876 it did so via Lydford and the Tavistock branch. A new station was built at North Road, beyond which these L.S.W.R. trains travelled by the new Cornwall Loop, bypassing Millbay, to Devonport Junction. From here the L.S.W.R. had built its own short branch to reach a handsome Devonport terminus.

#### Second L.S.W.R. Approach

In 1890, however, the associated Devonport and South Western Junction Railway opened a new double line from Lydford via Bere Alston and St. Budeaux to reach the opposite end of the Devonport terminus and so convert it to a through station. L.S.W.R. trains thus reached Devonport independently of the G.W.R. (with which the South Devon and Cornwall Railways had amalgamated) but continued to pass through North Road to reach a new terminus at Friary in eastern Plymouth. At North Road, as at Exeter, down L.S.W.R. trains now travelled in the same direction as up G.W.R. ones. The route to Friary lay partly over the G.W.R. Sutton Harbour branch. During the last decades of the nineteenth century, eastern Plymouth was the scene of continual battles between the two railways. The last line to be opened was that to Yealmpton in 1898.

Most of the suburban stations and halts were opened between 1904 and 1906 when, rather belatedly, the railways began carrying enormous local traffic. Bus competition gradually reduced the number of halts, but no major change in the arrangements between the two railways transpired before 1939. The first sign of changing times came when the Yealmpton branch (closed since 1930) was temporarily reopened in 1941 for the convenience of Plymouth people forced out of the city by the bombing. Instead of joining the main G.W.R. line as they had done previously, the trains (like those on the Southern's Turnchapel line) terminated at Friary. Also in 1941 Millbay, once Plymouth's most important station, was closed to passengers so that it could serve temporarily as a goods station, the adjoining one having been blitzed. Closure would anyway have been delayed only a little longer, owing to the inconvenience of its short platforms—and of dividing the Saltash suburban service between there and North Road.

#### Present Changes

Even nationalisation brought scant immediate change. In fact the only economy apart from the sharing of station staffs in several instances was the closing of the duplicate (ex-L.S.W.R.) goods line to North Quay. Now, however, events are moving rapidly. Further closures and demolitions there have certainly been, but only as part of the constructive process of simplification.

The modernisation programme first made itself evident at North Road, where about two years ago work recommenced on the station alterations which had been in abeyance since the beginning of the war. There have been extensive changes in the layout at either end of the station and a much-needed additional platform has been built. There

#### New Motive Power Depot

One complication in recent years has been the lack of a turntable long enough to take the Southern Region "West Country" Pacific locomotives. Until September last year they turned on the triangle Friary Junction, Cattewater Junction and Mount Gould Junction, but the Mount Gould Junction to Cattewater Junction section (built to enable the G.W.R.'s Yealmpton trains to by-pass Friary) has been demolished. The Pacifics now use the Mount Gould Junction, Laira Junction, Lipson Vale Junction triangle. In the middle of this triangle is to be built the new Laira locomotive depot for diesels. The last Western Region steam locomotives are expected to leave Plymouth in 1961, when the present Laira locomotive depot, built at the turn of the century, will be removed. Work has started on the foundations of the new depot, which will be built in three stages. There will be eight covered roads, the longest being 210 feet. Southern Region diesels, when they appear, will also be accommodated here, but the steam depot at Friary is expected to remain at least until the mid-1960s.

#### Carriage Sheds

On several occasions there were plans to quadruple the track between Lipson Vale Junction and North Road, through Muly Tunnel, and a start was in fact made outside Laira locomotive depot. This section has always been a bottleneck, light engines and empty autocars to and from Laira and North Road adding considerably to the congestion. Some locomotive movements will, of course, continue, but autocars and many local trains will be replaced by multiple-unit diesel sets, to be maintained and stored respectively at Harwell Street and Belmont between Cornwall Junction and Millbay. The conversion of the four-road Harwell Street carriage shed into a maintenance unit should be finished by the time the first suburban multiple-unit sets arrive, probably at the end of this year. Foundations are now being laid for 10 new sidings at Belmont.

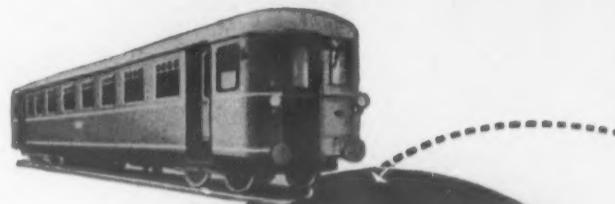
Meanwhile the platforms at Millbay station have been demolished, and their place taken by sidings for locomotive-hauled carriage stock. When Friary goods station is ready, Millbay goods will be demolished to make room for more carriage stock sidings. The shortage of stabling in recent years has been such that on summer Saturdays it has sometimes been necessary to send empty trains far afield as Newquay.

The emphasis in the plan is, of course, on long-distance passenger and bulk goods traffic. The railways' role is now a specialist one, and the need

(Continued on page 5)

## B.U.T. RAIL TRACTION DIESELS

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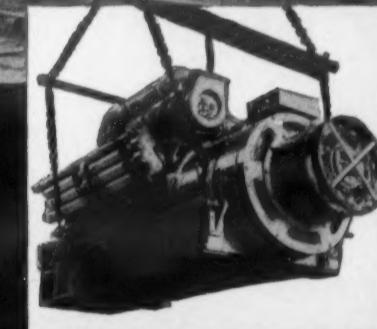
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## ROAD VEHICLE INDUSTRY

### More P.A.Y.E. Buses for Maidstone

**T**HE fleet strength of Maidstone and District Motor Services, Limited, includes the considerable total of 90 P.A.Y.E. single-deckers; the operational conditions in the large area covered by the company include many routes that can be economical only when served by this class of vehicle. With the experience gained from the use of this fleet, the company can lay down a detailed specification covering all the special features necessary to meet its particular conditions. The new 40-seat vehicles now being delivered by Park Royal—a total of 20 on A.E.C. Reliance chassis—embody these features in the Park Royal standard single-deck body, which was developed to allow wide variations in equipment without major structural change. P.A.Y.E. features include an enclosed driver's cab with lockable full-height door to the main gangway. The ticket-issuing machine is mounted to a shelf on the door; in the partition



One of the Park Royal-bodied A.E.C. Reliances for one-man operation by Maidstone and District

behind the door is the cash box, divided into four compartments, with marked slots in the desk top showing the coin values, and a change tray. Two sliding glasses are fitted, one vertically over the change tray, one horizontally at head level, both glasses being lockable and the driver's pedestal seat is of swivelling type. A public address system is installed with microphone in the cab and three speakers in the roof centreline for route announcements. Illuminated "Pay-as-you-enter" signs are installed in the front end and to the rear of the entrance, which has driver-controlled electrically operated glider doors with illuminated stepwell for night use. One further point is the use of a flashing white reversing lamp in the offside rear end coupled to a high-frequency electric horn sounding intermittently, switched when reverse is engaged, though the horn may be isolated by the driver.

#### Aluminium Extrusion Chart

**N**OW available from the metals division of Imperial Chemical Industries, Limited, is a wall chart, illustrating and giving dimensions and weights of the wide range of I.C.I. standard-production aluminium-alloy extrusions designed for road transport vehicles. These representative sections are all available from stock and details of other sections can be obtained from the company's sales offices in main towns and cities.

#### Cummins-Engined Seddon

**S**AID to be the first British-built eight-wheeler with Cummins diesel engine in operation in this country is a Seddon DD8 platform lorry in service with Scottish Co-operative Wholesale Society, Limited. The vehicle is powered by the Cummins HF6 diesel, a unit of 672 cu. in. (11 litres) capacity developing 178 b.h.p. at 2,100 r.p.m., which drives through a David Brown 561 five-speed gearbox and 5.6 to 1 double-drive bogie with inter-axle differential.

#### Gas-Heated Spray Booths

**T**WO gas-heated paint-spraying and drying booths at the Tyburn Road works of Birmingham City Transport Department are each big enough to take the largest double-deck buses. They were installed when the department changed from brush to spray painting as a more efficient and economical means of painting its buses with a maximum interval of 2½ years. Previously tests over several years had shown that sprayed varnish, properly applied, would stand up to service as well as paint, brush applied by experienced coach painters. The booths are of the water wash-down draught type and can be closed by power-

operated roller-shutter doors. Each booth is equipped with a moving gantry which rises 11 ft. above ground level around the vehicle to be painted. After a bus has been sprayed, the roller-shutter door is closed and gas-heated air is blown into the booth to dry the paint.

#### Multipla Taxi Fleet

**U**SED already in a number of countries as a form of "economy-class" taxicab, the Fiat 600-cc. rear-engined Multipla six-seater has found an application in similar work in this country. Six of the vehicles have recently been supplied by Blue Star Garages, Limited, Rickmansworth, Fiat main distributor, through Sandy Lodge Service Station, Northwood, to owner-drivers of the L.C.C. Oxhey Estate cab rank.

#### Commer-Karrier European Service

**C**ATERING for Commer coach operators on the Continent is a comprehensive parts service, which is available at various centres. Commer and Karrier spares can be obtained in Paris from Rootes Motors S.A., 6 Rond-Point des Champs Elysées, Paris, 8ème. (telephone Elysee 04-37); and service from 36 Rue Pierret, Neuilly-sur-Seine (Maillet 96-71); in Brussels from Rootes (Belgique) S.A., Shell Building, 47 Canteen (12.02.42); in Geneva from Rootes Autos S.A., 10 Rue du Commerce (25.32.30), with service at Port-Franc de la Renfle, Vernier-Geneve (022-8.91.97); and in The Hague from Internationale Automobiel Maatschappij N.V., Scheldestraat 2-6a (850300), with service at Einckhorstlaan 10 (723991).

#### Renault Light Van

**J**UST announced by Régie Nationale des Usines Renault is a new light van for 500 or 600 kg. (about 10 cwt. and 11 cwt.) payloads based on Dauphine private car units and embodying front-wheel drive and all-round independent suspension by coil springs. It is also available in pick-up form and with eight-seat passenger bodywork. Named Estafette and Estafette Zone Bleue respectively, there is a slight difference in rear suspension only between the 600-kg. and 500-kg. versions. In fact the Zone Bleue, as its name implies, is introduced only because of the ban on vehicles of greater capacity in parts of some French towns during certain periods. The new vehicle is of integral steel construction with overall dimensions 13 ft. 5 in. long and 5 ft. 10 in. wide, giving a load space behind the driver of 41 sq. ft. with a flat floor. A four-cylinder petrol engine of 845 cc. is mounted ahead of the front axle and drives the front wheels through a four-speed gearbox.

#### RAILWAYS AT PLYMOUTH

(Continued from page 3)

for a better passenger station is not lessened by the fact that more cuts may have taken place in local services by the time it is ready. Chief among these cuts may be a substantial reduction in, if not the end of, the Saltash suburban service. There are now about 30 daily North Road—Saltash trains, but it is assumed that the local business will be lost to buses and cars when the road bridge is built beside the Royal Albert Bridge in a few years' time. The reduction in the number of trains using the Western Region route via Keyham will enable the Southern Region's trains to be transferred to it by the wartime connection between the two railways at St. Budeaux. The Southern will then be closed between St. Budeaux and Devonport Junction—an expensive section with two long tunnels. There is little traffic at the two intermediate stations, and the Stonehouse Pool branch, once used by L.S.W.R. ocean specials in competition with the G.W.R., is already virtually closed—a contrast to the busy ex-Southern Cattewater branch, where diesel shunters handle heavy and varied traffic.

With a population of 208,000 (1951), Plymouth is the most remote city of its size in Britain and railways have inevitably played an important part in its development. The modernisation programme is a sign of confidence in both the city, urgently needing more industry, and in the future of railways as specialists in the long-distance field. Experience gained here during the next few years will be invaluable for railwaymen everywhere.

## Commercial Vehicle Prospects

### BRITISH INDUSTRY REVIEWED

**S**HORT-TERM prospects of the British heavy commercial vehicle industry as a whole are judged to be good in the second part of *An Economic and Financial Analysis of the British Motor Industry*, published recently under the general title *Motor Business* by the Economist Intelligence Unit, Limited, 22 Ryder Street, St. James's, London, S.W.1. Production in 1959, it says, might well be between 10 and 15 per cent higher than in 1958, while there is a possibility of increasing demand for replacement public service vehicles. The longer-term position is thought to be less clear, depending on such factors as government policy (the possibility of C-licence restriction and progress with railway modernisation), the cyclical nature of replacement demand and the continued development of export sales. The survey appears, however, to be based more upon financial results than upon a study of output.

The review considers that further rationalisation and diversification of the industry, either by absorption of small firms by the two largest or by associations of some of the smaller manufacturers, will probably be necessary if profits are to be maintained in the face of rising competition and falling profit margins. Considerable finance is required to increase local production overseas as well as for extending credit and servicing facilities in export markets. Both have been made necessary, says the review, by the advent of the Common Market in Europe; the smaller manufacturers, with their low level of production, are not in the best position to raise the capital necessary for these purposes.

The text and charts in the publication are well presented and informative and there can be little

argument with the general conclusions drawn. Complete balance is, it seems to us, vitiated by an apparent failure to take account of the specialised nature of much of the production of the smaller manufacturers. Merging, absorption or extinction of some of the smaller concerns might be inevitable, but there will remain a place for the manufacturer of the high-quality custom-built commercial vehicle, it is to be hoped, for many years to come. His vehicles compete successfully in suitability for purpose (and hence, often, in operating efficiency) if not in price, with those of the quantity producer. It would indeed be a pity if the purpose-built commercial vehicle, which is on the way to becoming a monopoly of the British motor industry, were to be, as the review suggests, it might have to be, rationalised out of existence.

Strict accuracy of the review is also marred by an apparent misconception about the carrying capacity of the A.E.C. Mercury. This has led to the suggestion that A.C.V. had no share in the medium-heavy goods vehicle market and to the erroneous conclusion that A.C.V. has therefore been virtually unaffected by competition from the larger commercial vehicles of the Big Five general vehicle manufacturers.

An analysis of the Danish market for vehicles and tractors forms a valuable part of this issue. Denmark is an important market for the products of the European motor industry and the relative strength of the main producers there gives a useful indication of the position in Northern Europe as a whole. The future pattern of market shares is discussed in relation to Denmark entering one or other of the economic associations now being formed by West European countries.

## The KARRIER "Gamecock" 3-4 TONNER

### PETROL...

the phenomenal  
91 b.h.p. six-cylinder with  
porous chrome bores.



### DIESEL...

the amazingly economical  
87 b.h.p. six-cylinder with  
chrome-plated steel  
cylinder liners.

\* or the remarkable

### ROUTES DIESEL ENGINE

— a direct injection  
two-stroke with  
opposed pistons,  
developing 85 b.h.p.

**W**ITH its manoeuvrability, low loading height and alternative 'underfloor' power units providing long, trouble-free service between overhauls the Karrier 'Gamecock' is the ideal vehicle for the busy operator. The new three-seat cab with panoramic windscreens affords maximum visibility and comfort for driver and two passengers and is insulated against noise and extremes of temperature thus reducing driving fatigue to a minimum. Alternative wheelbases of 9' 7" and 11' 9" are available.

## Greater value than ever before!

A ROOTES PRODUCT—BUILT STRONGER TO LAST LONGER!

KARRIER MOTORS LTD. LUTON BEDS. EXPORT DIVISION: ROOTES LTD. DEVONSHIRE HOUSE PICCADILLY LONDON W.1



The  
choice  
of the  
Passenger  
Transport  
Industry

**Connolly**  
**Leather**

CONNOLLY BROS (CURRIERS) LIMITED

CHALTON STREET • EUSTON ROAD • LONDON N.W.1

TELEPHONE: EUSTON 1661-5

## OFFICIAL NOTICES

## EAST AFRICAN RAILWAYS AND HARBOURS ADMINISTRATION

## CADET CIVIL AND MECHANICAL ENGINEERS

VACANCIES exist for qualified graduates as Cadet Civil and Mechanical Engineers under agreement for training up to three years, with eligibility on completion for appointment on probation to the permanent and pensionable establishment as Assistant Engineers.

Total emoluments £880—£1,090 a year. Free passages. Generous leave. Rent-free quarters provided.

Candidates for the Cadet Mechanical Engineering vacancy must be aged 21-27 and possess a University degree in Mechanical Engineering, preferably with 12 months' practical experience in an engineering (preferably locomotive) works, or, have served an apprenticeship of at least three years in a recognised engineering (preferably locomotive) works and be a Graduate Member of the Institute of Mechanical Engineers, or be exempted from Sections A and B of the Associate membership examination.

For the Cadet Civil Engineering vacancy candidates must be under 26 and possess a University degree in Civil Engineering. No practical experience is necessary.

Write Director of Recruitment, Colonial Office, S.W.1, giving full name, age, qualifications and experience, quoting BCD 445/019/D16.

## TRENT MOTOR TRACTION CO., LIMITED

## VACANCY FOR BUS COMPANY ASSISTANT ENGINEER

THE Trent Motor Traction Co., Limited, whose headquarters are at Derby and which operates a fleet of over 400 buses and coaches—mainly in Derbyshire and Nottinghamshire—invites applications for the position of Assistant Engineer.

Candidates should have had suitable technical training and experience in heavy commercial vehicle maintenance work and of control of staff. The salary will be dependent upon the qualifications and experience of the successful applicant and will be commensurate with the responsibilities attaching to the appointment.

Applications, which will be treated in strict confidence, should be sent under "Private" cover to the General Manager, Trent Motor Traction Co., Limited, P.O. Box No. 35, Uttoxeter New Road, Derby, giving full particulars of the applicant's education, qualifications and career (including his present and all previous appointments), with a front cover sheet showing the undermentioned information:

1. Name and address.
2. Age.
3. Whether single or married and, in the latter case, the number and ages of any children.
4. Present appointment.
5. Present salary.

All applications should be in the company's hands by September 1, 1959.

## JAMAICA OMNIBUS SERVICES, LIMITED

## VACANCY FOR ASSISTANT TRAFFIC MANAGER

JAMAICA Omnibus Services, Limited, invites applications for the position of Assistant Traffic Manager.

The Company operates under an exclusive franchise in the Corporate Area of Kingston and Saint Andrew, Jamaica; the fleet consists of 170 modern Leyland omnibuses and there is a Jamaican traffic staff of approximately 700 persons.

Applications are sought from individuals who hold appointments of a suitably responsible level in the industry and who have practical experience in day-to-day operation of omnibus services and discipline and control of traffic staff, and some knowledge of departmental administration.

The appointment will be for an initial term of five years (subject to satisfactory service) and, subject to renewal, will continue thereafter on a three-yearly basis. The salary will depend upon the applicant's experience and qualifications, but will be not less than £1,500 per annum, inclusive of an overseas allowance of £350 per annum. A rent-free house will be provided for a married man, or an allowance of £300 per annum in lieu thereof for a single man. A car is provided by the company for official use, and can be made available (with the consent of the General Manager) for private use. The company has a Contributory Pension Scheme.

Passages will be paid to Jamaica for the successful applicant and family and three months' home leave will be allowed on completion of three years' service with paid passages for the officer and his wife.

Applications, which will be treated in strict confidence, should be sent under "Private" cover to the Secretary, The British Electric Traction Co., Limited, Stratton House, Piccadilly, London, W.1, to reach him not later than August 31, 1959, giving full particulars of the applicant's career with a front summary sheet showing:

1. Name and address.
2. Age.
3. Whether single or married, and in the latter case the number and ages of any children.
4. Education.
5. Professional and technical qualifications.
6. Brief statement of present and previous appointments arranged chronologically.
7. Present salary.
8. Earliest date available to take up appointment.

## COUNTY BOROUGH OF BOLTON

## TRANSPORT GENERAL MANAGER AND ENGINEER

APPLICATIONS are invited for this appointment. Salary Scale H (£2,195—£2,475). Forms of application and particulars of terms and conditions of appointment may be obtained from the undersigned, to whom applications should be delivered not later than September 5, 1959.

PHILIP S. RENNISON,  
Town Hall, Bolton. Town Clerk.

[Another Official Notice on Page 12]

## METROPOLITAN LINE

## L.T. Train Service Plans for 1962

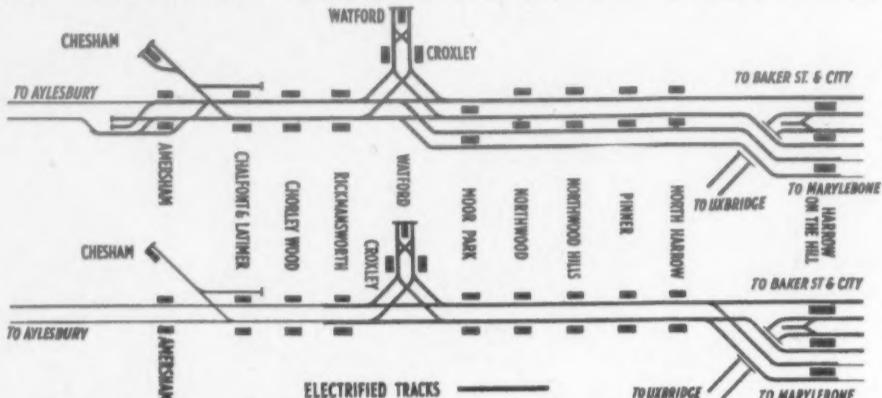
DETAILS have been announced by London Transport of its plans for new services on the Metropolitan Line when the £9 million programme of new trains, track widening and electrification is completed in mid-1962. The works, which have already started, comprise the electrification of 10 miles of steam-operated Metropolitan Line track between Rickmansworth, Amersham and Chesham, quadrupling of the seven miles of track between Harrow-on-the-Hill and Moor Park, and replacing the old brown painted compartment steam and electric trains by new trains to serve stations to Amersham, Chesham, and Watford.

The new service, together with the British Railways service from Marylebone will be provided by multiple-unit diesel sets which will work quarterly in the peak to Aylesbury, calling at Harrow-on-the-Hill, Chalfont and Latimer, Amersham, Watford.

Passengers to and from stations north of Harrow will have good interchange facilities with the B.R. Marylebone service.

## More Facilities

It is at present anticipated that the British Railways service from Marylebone will be provided by multiple-unit diesel sets which will work quarterly in the peak to Aylesbury, calling at Harrow-on-the-Hill, Chalfont and Latimer, Amersham,



The track layout between Harrow-on-the-Hill and Amersham as it will be in 1962 and, below, as it is at present

of the present mixture of six- and eight-car trains, and the combined volume of service (Metropolitan and British Railways) beyond Harrow will be increased by over 25 per cent in the heaviest hour of each peak with 9,800 seats against 7,800 now.

## Regular Interval Service

The service will be reorganised throughout on a regular interval basis and the electrification, the removal of the Harrow-Moor Park bottleneck, the elimination of locomotive changes at Rickmansworth and modern rolling stock will enable running times to be reduced and better punctuality to be maintained. Running time to many stations north of Harrow will be cut.

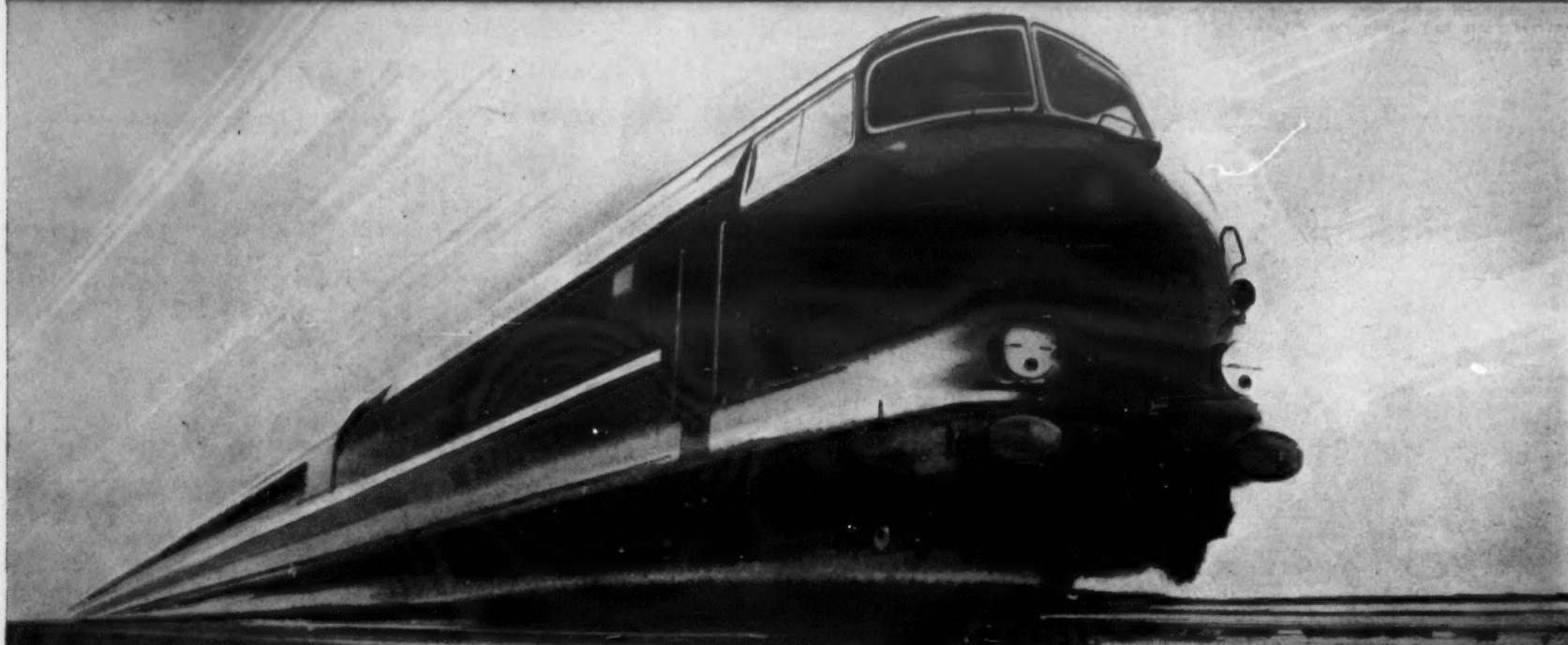
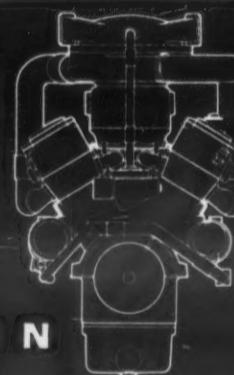
The pattern of the new regular-interval peak-hour train service will comprise four semi-fast trains each hour between Liverpool Street and Chalfont and Latimer calling after Finchley Road at Moor Park, Rickmansworth and Chorley Wood. Alternate trains will provide a connection at Chalfont and Latimer for Chesham and themselves continue to Amersham, while the other two will run through to Chesham. There will also be a quarter-hourly

Great Missenden, Wendover and Stoke Mandeville. Some indication of the degree of improvement in the peak-hour facilities to be provided is that Amersham will have 10 trains an hour against its present six, Chalfont and Latimer 12 instead of six, Moor Park 16 instead of 12 and the North Harrow, Pinner, Northwood Hills and Northwood group 12 instead of eight and a few British Railways trains. Passengers on the London side of Harrow should also benefit from improved regularity and fewer passengers from outer stations competing for room.

In the off-peak periods, too, the regular headway services will be quicker and more frequent. At those times there will be, in addition to the Watford trains, two semi-fast Metropolitan Amersham trains and one through British Railways Aylesbury train an hour in each direction. Shuttle services to and from Chesham will connect with the Amersham and British Railways Marylebone services at Chalfont. London Transport has issued a leaflet to passengers using the line, explaining the Metropolitan modernisation job to them and warning them that there may be some slowing-up of service during the major track and engineering works.

# MAYBACH POWER

COMES TO BRITAIN



Bristol Siddeley are now manufacturing under licence a range of diesel engines from 220 to 2,000 bhp rail traction rating developed by the world-famous German firm of Maybach, who have had 35 years' experience in the

manufacture of diesel traction units. Bristol Siddeley Maybach diesel engines are currently being introduced into British Railways Western Region as part of their modernisation programme.

BRISTOL SIDDELEY

**Maybach**

DIESEL ENGINES

BRISTOL SIDDELEY ENGINES LIMITED • COVENTRY • ENGLAND

## DOUBLE-DECK LONG-DISTANCE COACH

Ribble to Use 50-Seat Atlantean

### ENGINE NOISE RELEGATED TO THE BACKGROUND

WITH a view to improving the conditions of long-distance express coach travel Ribble Motor Services, Limited, has decided to offer refreshment service on the vehicle, with a steward or hostess, and full toilet facilities. To accommodate this extra equipment the company has turned to the double-decker and this class of vehicle is to operate over very long-distance Ribble and Standerwick routes, from the North-West to London, Scotland and the West Country. A prototype coach has recently been completed and if, as confidently anticipated, public reaction to upper deck travel proves favourable, a further 24 will be ordered, sufficient initially to cover basic frequencies on the above-mentioned groups of routes. Ribble has already had considerable experience of double-deckers on medium-distance express services through the operation of its White Lady fleet of Leyland Titans.

A ready christened the Gay Hostess, the new coach class is based on the Leyland Atlantean rear-engined chassis; the body, while essentially an M.C.W. shell, constructed by the Metropolitan-Cammell Carriage and Wagon Co., Limited, at Elmdon, has been finished off to Ribble requirements by Weymann's, Limited, at Addlestone.

The upper saloon seats 34, the lower saloon, which incorporates the servery and toilet, 16 pas-

trip, sitting at various positions in both saloons, and including a run along the Preston motorway, proved that in the upper saloon, even at the rear, engine noise is scarcely distinguishable from background noise, while downstairs the subdued roar of the underfloor diesel engine is replaced by a gentle hum from the rear. Air-leaf suspension on the front axle (using Dunlop Pneuride units) and torsion bar stabilisers on both axles smooth out road irregularities on indifferent surfaces. Coupled

with individually adjustable reclining seats the quality of riding is comparable to that offered in a superior private car and is completely fatigue-free. Vibration at engine idling speed and at the bottom end in gears is obviated.

All seats, with the exception of two opposite the stairhead in the upper saloon, are arranged in forward-facing pairs. They are Chapman Mk. 166 units; each has an arm-rest and small wing to the head-rest and can be push-button adjusted to four positions. In addition there is a two-position foot-rest. The seats are trimmed with Holdsworth's moquette and Connolly hide. The driver's seat is a Hallam, Sleigh and Cheston (Widney) unit. General interior lighting is provided by B.M.A.C. fixtures in the ceilings of both saloons. There are two intensity positions, "bright" and "dim," and in addition, for night travel, when "dim" general



This is No. 1251, prototype of the Ribble Gay Hostess coach class, a special version of the Leyland-M.C.W. Atlantean



Upper and lower saloon views which emphasise the excellence of the individual seating and lighting

sengers. This liberal standard of seating is only economically possible by utilising a 30-ft long, 8-ft wide chassis; at the same time equally luxurious facilities would have been totally uneconomic at traditional coach fare levels in a single-deck vehicle.

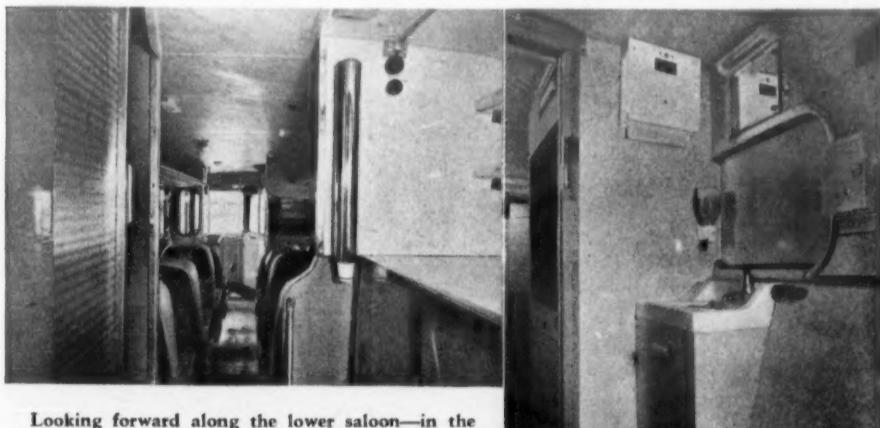
#### Refreshments Aboard

Mr. H. Bottomley, general manager of Ribble Motor Services, explained this week that the company had long foreseen the desirability of improving the already agreeable standards of coach travel over long distances, especially while 11-hour journeys were still inevitable. Ribble is, of course, bitterly disappointed that the Minister of Trans-

port has just shelved his earlier intention to raise the open-road speed limit for public service vehicles from 30 m.p.h. to 40 m.p.h. but it expects that when the green light for 40 m.p.h. is received and, in any case, as the motorways unroll across the face of England, travelling times can be progressively reduced. This, however, may bring catering problems in its train. Diplomatically silent on the standards of some roadside refreshment halts, Ribble feels that the best way to satisfy the needs of its passengers is to carry light snacks and beverages on the vehicle. As schedules are speeded up, the existing facilities may in any event prove inadequate, instead passengers will order tea or soft drinks from the courier (a male steward or a female hostess) and take their snack meal while the coach makes a 15-30 min. halt.

#### Heating and Ventilation

There are two Clayton S.17 heater units in both lower and upper saloons, one in each deck having a fresh-air intake. The driver has a windscreens demister and a heater. For ventilation air is admitted through louvres above the front screen in the lower saloon and discharged through a grille at the rear, and in the upper saloon there are air intakes ducted to the sill of the front windows and hinged Auster extractor vents in the rear side windows. Direct ventilation is afforded by 17



Looking forward along the lower saloon—in the left foreground is the nearside rear luggage locker enclosed by a sliding door and, right, paper cup dispenser and pantry working table. Right, wash-basin in the nearside toilet

port has just shelved his earlier intention to raise the open-road speed limit for public service vehicles from 30 m.p.h. to 40 m.p.h. but it expects that when the green light for 40 m.p.h. is received and, in any case, as the motorways unroll across the face of England, travelling times can be progressively reduced. This, however, may bring catering problems in its train. Diplomatically silent on the standards of some roadside refreshment halts, Ribble feels that the best way to satisfy the needs of its passengers is to carry light snacks and beverages on the vehicle. As schedules are speeded up, the existing facilities may in any event prove inadequate, instead passengers will order tea or soft drinks from the courier (a male steward or a female hostess) and take their snack meal while the coach makes a 15-30 min. halt.

#### Noise-Free Travel

Attractive though this on-demand refreshment service is likely to prove, it takes second place to the riding qualities of the new coach. A prolonged

Beclawat Simslide units, 10 in the upper saloon and seven in the lower.

Smith's Radiomobile public address equipment (but not radio) enables either driver or courier to speak to passengers on both saloons. Accommodation for 130 cu. ft. of luggage is provided at five points—over the nearside front wheelarch; under the staircase, over the nearside rear wheelarch; behind the emergency door; and at the rear of the upper saloon—and also on luggage racks in both saloons. These racks, incidentally, have padded edges although there is ample room to rise from the seats beneath them.

#### Interior Finishes

Interior trim is largely carried out in plastics materials in pleasing shades of grey and pastel green. Green Brifex is used for both ceilings and undersides of luggage racks, grey Lionide for side panels and Formica in pearl grey for window facings. The additional space needed for light fittings

(Continued on page 13)



... in the right place  
... at the right time

... that's the secret of successful chassis lubrication. And it's the ability

of the Clayton Dewandre Automatic system to do just this that makes it an all-the-way winner... especially if fitted right from the start when ordering a new vehicle. C.D. Automatic Chassis Lubrication goes right to the heart of the problem. A constant supply of oil is pumped to all the vital points while your vehicle is on the road, saving oil and maintenance time. This supply through individual pressure-feed lines extends the life of each bearing by up to ten times! That's why over 60,000 Clayton Dewandre lubrication systems are now in daily use... why Clayton Dewandre have a reputation of pre-eminence in the field of road vehicle equipment.

Write for descriptive leaflet

- No further cost after installation—system lasts life of vehicle.
- No maintenance required—just keep the reservoir topped up.
- 24 or 36-point automatic systems available for short-run vehicles.
- 24 to 72-point mechanical systems for long-distance vehicles.

**CLAYTON DEWANDRE CO. LTD.**

AUTOMATIC CHASSIS LUBRICATION

TITANIC WORKS • LINCOLN • ENGLAND • TELEPHONE: LINCOLN 25272



**"That's a long 'un"**

"Sure it is. It's for taking long loads... as well as short ones.  
17 feet 7 wheelbase... body, 24 feet."

"Stacks of room, by the look of it."

"Stacks! She scales at nearly 9½ tons gross on standard tyres,  
and with her 105 B.H.P. Diesel she's pretty nippy, too. And what's more,  
there's a choice of 5 wheelbases down to nine foot six."

"That cab looks pretty comfortable, too!"

"Comfortable's not the word. She's a driver's dream of home."

THE  
**DENNIS**  
'DB'  
SERIES  
**PAX II**

DENNIS BROS LTD GUILDFORD

The DB Pax II is the ideal general purpose vehicle. Five chassis lengths and a vast variety of bodywork to suit most needs... a modern draught-proof, fatigue-proof cab that is in the "hand-made" class... all add up to the answer to a very large number of transport problems.

The DENNIS range of vehicles covers every conceivable road transport problem... from fire-engine to grocers' vans... from brewery transport to ambulances and municipal vehicles of all types.



## The NEW-LOOK COMET at the same low price

- A modern-style luxury cab with draught sealing, thermal insulation, high volume heating and ventilation.
- 100 h.p. 6-cylinder diesel with wide margin of performance.
- 5-speed gearbox with helical gears. Optional 6th speed overdrive.
- Double reduction rear axle with second reduction in the hubs. Alternative 2-speed axle.
- Powerful and progressive Hydrovac-hydraulic brakes.
- Low initial cost.



This new 12 ton g.v.w. Comet, CS3 range, is distinguished by important new features. These include power-boosted braking which is extremely progressive and lighter to operate... new hub reduction rear axle for all-round strength, lightness and extra durability... an all-steel Vista-Vue cab which, for comfort

and safety, is years ahead of any other commercial vehicle.

The range consists of three haulage models—suitable for body lengths up to 23' 6"—two tractors and a tipper. And the price is still the same—as low as any quality-built truck can be. A demonstration will prove our claims. Arrange for one today.

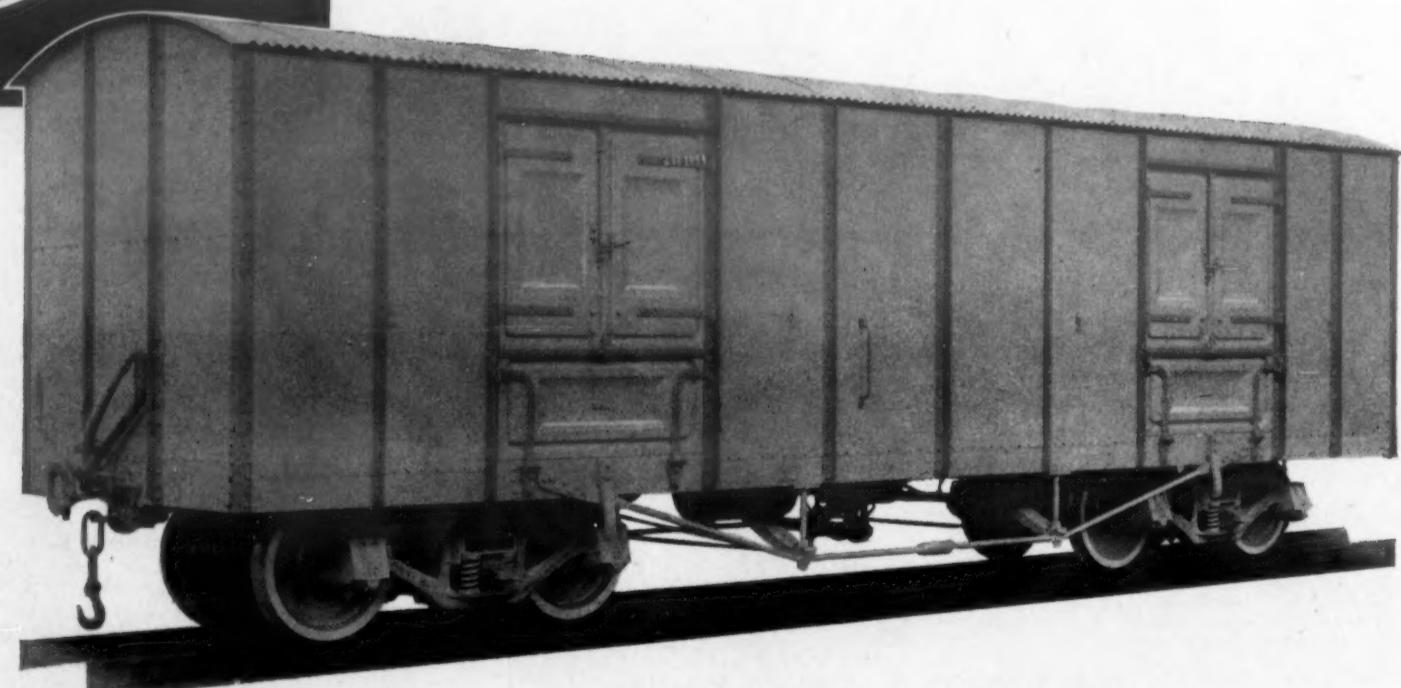
**Leyland** for higher performance at lower cost

LEYLAND MOTORS LTD., LEYLAND, LANCS.

Sales Division: Hanover House, Hanover Square, London, W.I. Tel: MAYfair 8561



## BUILDERS OF WAGONS FOR THE SUDAN RAILWAYS



### CONTRACT COMPLETED

850 Bogie Covered Wagons for The Sudan Railways have now been delivered

METROPOLITAN-CAMMELL CARRIAGE & WAGON CO. LTD.  
HEAD OFFICE · SALTLEY · BIRMINGHAM 8  
LONDON OFFICE · VICKERS HOUSE · BROADWAY · WESTMINSTER · S.W.1

## NEWS FROM ALL QUARTERS

### Zoo Waterbus Service

Success has attended the London Zoo waterbus service, operated by British Waterways on the Grand Union Canal between Little Venice (Warwick Crescent), Paddington, and the Regent's Park Zoo. Over 29,000 passengers have been carried since it began last May, and a second 46-seater boat, *Water Wagtail*, has joined *Water Buck*, the original waterbus, to give a half-hourly service. A third boat is now being converted to cater for special parties.



### Revision of Swiss Fares

On October 1 Swiss transport undertakings will introduce new passenger tariffs which will incorporate fare increases and in some cases important alterations of tariff conditions. Ordinary single fares (agency coupons) and 10-day return fares will be increased by approximately 10 per cent.

### Public Transport Revival in U.S.A.

The D.C. Transit System, in Washington, the U.S. capital, has proposed a 116-mile monorail system, all but five miles to be above ground, and not to be outdone, the planning authorities for the area have put forward outline schemes for a 66-mile express bus network and a 33-mile rapid-transit rail system, all but five miles to be above ground, and relieve road congestion by increased resort to public transport.



### Bletchley-Oxford-Cambridge Line

The London Midland Region has stated that as the study of the economics of the Bletchley-Oxford-Cambridge line will take some time and the line is subject to certain statutory provisions, it will not be possible for the train services to be withdrawn for two years. In order to make the service of trains on this line more economical, a multiple-unit diesel service will be introduced before the end of the year in place of the present steam trains.



### Grimsby-Immingham Railway Abandonment

Acting upon the recommendation of the East Midland area Transport Users' Consultative Committee, the Eastern Area Board of the B.T.C. has decided that the Grimsby and Immingham Electric Railway shall in principle not be closed until September, 1961, but from next month it will operate at peak hours only, and fares will be raised to about the level of those on a parallel bus route, operated by Grimsby-Cleethorpes Transport, which will provide the off-peak service.



### Revolution in Milk Handling

The National Research Development Corporation has sponsored a process for deep freezing milk whereby it will retain its properties unimpaired for 18 months. The milk can be transported in containers of up to one gallon capacity in refrigerated accommodation and is already sold in liquid-proof cartons down to half-pint size. It will be a special boon on board ships and one shipping line is already using it on voyages as far as Australia and back. The deep-freezing process is preceded by ultrasonic vibration of the pasteurised milk.



### Improvements to Motorway Approaches

Two more lengths of road between London and the London-Birmingham motorway are to be modernised at a cost of £480,000. One links the recently completed London Colney by-pass to the Park Street terminal of the St. Albans by-pass on A405 and the other starts at the south-eastern end of the London Colney by-pass and will lead to the projected South Mimms by-pass on A6. The total length of road to be improved will be nearly three miles. A flyover will be provided at the crossing on the A405 between Napsbury Lane and Shenley Lane.



COMMERCIAL AVIATION

B.E.A. Results Improve

BLACKBUSHE TO CLOSE

In his latest message to the staff the chairman of British European Airways, Lord Douglas of Kirtleside, confirms preliminary estimates that the corporation would show a small profit for 1958-59. The actual figure is expected to be about £230,000 and profit before charging interest on capital about £1,300,000. The chairman considers this very reasonable for a year in which most airlines experienced a recession. The recovery in the rate of traffic growth which began late in 1958 has continued and in the first three months of the current year (April, May and June) the passenger traffic was 22 per cent above the level for 1958-59. In June the revenue load factor rose by 15 per cent on the same month last year to 68.3 per cent.

Air France Caravelles to London

On July 27 Air France commenced operation of a daily Caravelle flight between London and Nice. This jet aircraft also provides a daily flight in each direction between London and Paris.

B.O.A.C. to South America

As already indicated in our complimentary news letter of July 25, the British Overseas Airways Corporation is planning to restore its trunk service between London and Santiago (Chile) next January using Comet 4 aircraft.

B.E.A. Agreement with Olympic

An agreement was concluded last month between British European Airways and Olympic Airways for the co-ordination of their services between the United Kingdom, Greece and the Eastern Mediterranean.

Hovercraft Crosses the Channel

The Saunders-Roe SRN1, which is to appear at the S.B.A.C. flying display and exhibition at Farnborough, crossed the English Channel from Calais to Dover on July 25 in 2 hr. 3 min. including 3 min. for refuelling. It averaged about 13 knots.

Another I.A.T.A. Member

Hawaiian Airlines, Limited, has joined the International Air Transport Association as an associate member bringing the total of I.A.T.A. membership to 89 companies—80 active and nine associate members.

K.L.M. to Serve Rotterdam

K.L.M. (Royal Dutch Airlines) is to reintroduce services from Rotterdam Airport. It has not operated from there since 1939. The first K.L.M. service from Rotterdam will be to London, probably commencing on November 1 with Viscount aircraft. The frequency and timings are not yet known.

Air Ceylon Developments

Following a bilateral agreement between Ceylon and Italy, Air Ceylon has been granted permanent traffic rights at Rome while Alitalia has similar rights at Colombo. The Ceylon airline expects to commence the service to China, which was provided for in an agreement last March, later this year and probably in December. The terminus would be Canton.

B.O.A.C. Pacific Service

The British Overseas Airways Corporation has now been authorised by the United States to carry passengers between Tokyo and San Francisco and hopes to commence its round-the-world service within the next 10 days. Comet 4s will be used on the eastern sector between London and Tokyo and Britanniens on the Tokyo—United States—London portion of the route.

M.C.A. Opens Viscount Service

Maritime Central Airways on August 5 became the second Canadian airline to operate the Vickers Viscount—Trans-Canada Airlines pioneered the Viscount in North America in 1955. M.C.A. has purchased its Viscount, a V805, from Eagle Airways. The Viscount routes operated from August 5 will be from Moncton, New Brunswick to Goose Bay (Labrador) and to Gander and St. Johns in Newfoundland. The aircraft has a movable bulkhead in the main cabin so that the passenger-freight ratio can be varied between the various points.

Irish Air Lines Results

In the financial year ended March 31, 1959, Aer Lingus made a net operating surplus of £119,673 which compared with an operating deficit in the previous year of £43,674. For the first time the company carried more than 1 million passengers in a single year. During the year 500,574 people were carried on Aer Lingus services, an increase of 13 per cent on the figure for 1957-58. The cargo figure for the year was up by 11 per cent from 6,569 tons in 1957-58 to 7,278 tons. During the year 18,863 revenue flights were operated and revenue miles flown topped the 5,000,000 mark for the first time. In eleven months of operation Aerline Eireann carried 14,781 passengers on its North Atlantic route against an estimate of 13,000 and the excess of expenditure over revenue was £804,084, which was rather less than had been forecast.

Blackbushe Airport to Close

The Minister of Transport has decided that Blackbushe Airport must be given up. Most of the land on which the airport stands was requisitioned during the 1939-45 war under emergency powers expiring at the end of 1960. The Minister considers that he would not be justified in acquiring it by compulsory purchase order, and it will therefore be returned to its owners and cease to be used as an airport. To allow time for the removal of the state assets and tenants' property from the land by the end of 1960, flying will have to cease about the middle of next year, and an announcement will be made later when a date has been fixed. Aircraft and passenger movements at Blackbushe have remained low. In recent months the three largest operators (together responsible for over two-thirds of the aircraft movements in 1958) have either left Blackbushe or begun to plan the transfer of their flying operations to more suitably placed airports. It is therefore unlikely that there will ever be sufficient traffic to justify the capital expenditure (of the order of £2 million) required to bring the airport up to modern standards for larger aircraft. The air traffic control plan for the London Area requires a limit on the number of movements at Blackbushe, and it is therefore not suited in the long term to take the eventual overflow of traffic from London's two main airports, London Airport and Gatwick. The Minister has thus been forced to the conclusion that it would be wrong to acquire the land. It is contemplated that the Ministry will in due course meet the airlines affected by the Ministry's decision should such a meeting be desired.

## A LONG CAREER IN PASSENGER TRANSPORT



*A. T. Evans*

Mr. A. T. EVANS, M.Inst.T.

• • • •

General manager of United Automobile Services, Limited, since 1934, Mr. Albert Thomas Evans, as already recorded in MODERN TRANSPORT, retired on July 31. Mr. Evans was born at Taunton and joined the former Bristol Tramways and Carriage Company in 1912. He served with the Royal Gloucestershire Hussars and the Machine Gun Corps in the war of 1914-18 and vacated his position with the Bristol company upon appointment as accountant to United Automobile Services, Limited, in 1922. The fleet at that time numbered 160 vehicles and has since grown to 1,200. He was appointed secretary of the United company in 1926, was made traffic manager in 1930, became general manager in 1934 and a director in 1948. No fewer than 115 omnibus undertakings were acquired between the years 1929 and 1939 and absorbed within the economic expansion of his company's territory. Consequent upon increasing activity in the iron and steel industry on Tees-side and the growth of Imperial Chemical Industries' plant at Billingham he directed his attention to the deployment and development of road passenger services in that area. In 1935 Trutime Deliveries, Limited, with 34 lorries was acquired and incorporated with the U.A.S. parcels van system serving Northumberland, Durham and North Yorkshire. A day and night service linking Leeds and Manchester with Tees-side and Tyne side was established. Shortly after hostilities commenced in 1939, at the request of the G.O.C., he organised a scheme for the laying on of troop carrying transport operative throughout the defence area of the Northern Command. Some 1,500 vehicles were available on call, with day and night emergency contacts. From 1942 to 1944 he was chairman of the Darlington Appeal Board under the Essential Work (General Provisions) Order, 1942, and until 1957 he was chairman of the Reinstatement Committee under the Reinstatement in Civil Employment Act, 1944. Consequent upon the Transport Act, 1947, he was in close liaison with the Road Passenger Executive in ascertaining and preparing the documentary data related to 136 undertakings operating 4,000 public service vehicles within the Scheme for the Northern Area as to passenger road transport services. He is a chartered secretary and a member of the Institute of Transport, having served as chairman of the Northern Section for two successive years.

LETTERS TO THE EDITOR

News Summary

THE DOUBLE-DECK BUS

SIR.—May I add my expression of sympathy in the printing difficulties which you have been experiencing. At the same time I would like to compliment you on your abbreviated publication. I would go further and say that the condensed news has been presented in a way very easy to read and assimilate. May I throw out the suggestion that a summary in this form on one of the pages of your regular issue, when it is resumed, might well find favour with many of your readers?—Yours faithfully,

T. ROBERT WILLIAMS.

Stratton House,  
Piccadilly, London, W.1.

[This suggestion, made by a number of correspondents, regarding the summary in our complimentary news bulletin is being adopted. See page 1—Editor, MODERN TRANSPORT.]

The Double-Deck Bus

SIR.—The conception of the double-deck bus as a single-decker with overload capacity is interesting, though it is curious to note that the earliest knifeboard horse-buses fit this description. I wonder, however, whether the economic logic of this approach to the design of the modern bus will be very clear to the potential customer. For instance, off-peak passengers may well find that they will have to travel in possibly crowded conditions downstairs, while about half the accommodation provided on the vehicle spends the major part of its working life locked up, unused and inaccessible.

Quite apart from those who now choose to travel upstairs in order to help spread the load and avoid frequent disturbance by short-distance passengers, there are the top deck sightseers to consider. It would seem very doubtful if these not uncommon bus users will accept the bottom deck of a low-loader, with almost no forward view, as fair exchange.—Yours faithfully,

CHARLES S. E. LONG.

7 Church Road,  
Leatherhead, Surrey.

The Rout of the London Midland

SIR.—After reading the L.M.R. closure proposals given in your issue of May 23, one is left in little doubt that the London Midland's career as a passenger-carrying region is drawing to a close. Evidently the counter offensive waged by the diesel railcar has failed to stem the withdrawal begun by the L.M.S. Railway in the 1920s, and the region is now in full retreat.

Presumably the so-called "passenger plan" is merely a catalogue of service withdrawals, each of which must inevitably stimulate further intensification of private car activity. Clearly, unless the retreat is stopped, main-line closures will follow as a natural consequence, the region becoming a freight-only system.

It is therefore pertinent to ask why production of diesel railcars and modern coaching stock is being allowed to continue for surely, in four or five years' time, there will be a great surplus of such vehicles.—Yours faithfully,

"DERWENT."

Preservation of a Feltham Tram

SIR.—Regarding the letter in your issue of May 30 from Mr. Claydon referring to the possibility of the preservation of a Feltham tramcar, a few of us are negotiating with Leeds to purchase one and a fund has been formed for the purpose.

We have been promised a site with the probability of running powers and should anyone be interested I should only be too willing to send them particulars.—Yours faithfully,

R. ATKINSON.  
The Feltham Fund.

25 Kempshott Road,  
Streatham, S.W.16.

A Portuguese Bridge

SIR.—The caption below the photograph of the Luiz I bridge over the Douro at Oporto, on page 10 of your issue of June 20, is wrong. This Belgian-built bridge carries two 18-ft. roadways on the top and bottom decks, and only pipes and cable services at the level of the bottom chords of the top deck truss girders. There are two tramway tracks on the top roadway, but this bridge has never carried railway loads. It is a curiosity that the Portuguese Railways has only one connection between the lines north of the Douro and those to the south, and that is by the 520-ft. two-pinn arch span of the Maria Pia bridge at Oporto. It was built by Eiffel et Cie in 1877. It is situated about a mile upstream of the Luiz I bridge, and carries a single track. I was privileged to visit both these bridges on the occasion of the fifth Congress of the International Association for Bridge and Structural Engineering in 1956.—Yours faithfully,

P. S. A. BERRIDGE, M.I.C.E.

16 Rutland Road,  
Maidenhead, Berks.

Omnibus Society Records

SIR.—The Omnibus Society has during the past year acquired premises for the storage of historical and other records and is anxious to acquire prewar *Notices and Proceedings* of the Traffic Commissioners for all areas so that gaps in the complete historical record may be filled. Many copies of these documents are no doubt lying in old files, stored away in filing rooms or even lofts very rarely used or required by operators, police departments and town clerks throughout the country. I would ask the courtesy of your columns in the hope that any copies surplus to requirements at any location may be acquired by the Omnibus Society.

It may well be that some of the smaller establishments which are housing these documents in case of need would be glad to recover the space so occupied with the understanding that the Omnibus Society with its unique knowledge would provide any information on the history of services which they might require. Any organisation wishing to dispose of, but not destroy, *Notices and Proceedings* and any other historical documents relating to the history of buses and bus services should get in touch with the Society with the full assurance that the material would be placed in very appreciative hands.—Yours faithfully,

J. G. BRUCE,  
Chairman,  
The Omnibus Society.

111 Baker Street, W.1.



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## COMMERCIAL VEHICLE TEST

### Bedford Normal-Control 4-Ton Diesel Lorry\*

#### STABILITY AND EASY LOADING WITH SMALL WHEELS

A DOPTION of 16-in. wheels and tyres, instead of the normal 20-in. equipment for vehicles of up to 4 tons capacity in the Bedford normal-control range introduced last September was a bold step by Vauxhall Motors, Limited, but one obviously well considered since in practice the advantages gained by the change appear well to outweigh any potential or fancied disadvantages. Such at all events was the impression gained in our recent road test of the latest normal-control 4-ton lorry; powered by the Bedford four-cylinder 200 cu. in. (3.25 litres) diesel engine, with a full 4-ton payload it proved an economical and easily riding vehicle over our standard test route along the hilly Kent-Surrey border. We had previously driven a similar vehicle over the pavé surface at the Vauxhall proving ground at Chal End and had been impressed with its superior stability and handling qualities under such extreme conditions compared with a loaded 4-tonner on standard wheels and tyres.

A big practical advantage of the smaller wheels, particularly in distributive work, is a lower loading height. Fitted with a standard Bedford platform or dropside body this is less than 41 in. (unladen) in the 4-tonner, or about 7 in. lower than average. This generally lower pitch also makes life easier for the crew, a benefit enhanced in this case by the normal-control layout which provides step-in rather than climb-up access. As has been said already, the lower centre of gravity is an important

is standard throughout the range, as described in the road-test report of the 7-ton tipper in our issue for June 13, providing a maximum of comfort for driver and two passengers.

#### Designed for 4-ton Loads

The J3L is not just a strengthened 3-tonner but is designed for a full 4-ton payload, with normal bodywork, at a recommended gross weight of 15,000 lb. (6,804 kg.). Even with the bonneted cab, a 13 ft. 5 in. wheelbase permits the use of the standard 14-ft. long Bedford works-built body and

a good steering lock gave the vehicle tested a wheel track turning circle of 50 ft. 6 in. The swept circle was 53 ft., which is little more than the average for a forward-control vehicle with a body of the same length. Adding a 4-ton load to the dropside body of the test vehicle brought the running weight to 6 tons 13 $\frac{1}{2}$  cwt., of which 1 ton 16 $\frac{1}{2}$  cwt. was borne by the front axle, and the whole of our test was run with the additional weight of a crew of two—about 2 $\frac{1}{2}$  cwt.

In general it seems that the new Bedford not only fills a gap in the range of capacities between 3 and 5 tons, but also confers a bonus (and a handsome one if estimated savings on tyres work out in practice) by carrying 4 tons almost as speedily and thriflly as many 3-tonners. As far as our test was concerned, the spirited and economical performance of the four-cylinder 200 cu. in. Bedford diesel engine was confirmed. Average

#### TEST RESULTS AT A GLANCE

##### Vehicle Details

MAKER: Vauxhall Motors, Limited, Luton, Beds.

TYPE: J3LD7 Bedford normal-control 4-ton diesel lorry.

ENGINE: Bedford four-cylinder direct-injection diesel, bore 3.875 in. (98.42 mm.), stroke 4.25 in. (107.95 mm.), displacement 200 cu. in. (3.25 litres), compression ratio 17 to 1; 64 b.h.p. at 2,800 r.p.m., 143 lb./ft. torque at 1,400 r.p.m.

TRANSMISSION: Clutch, 10 in. dia. single dryplate, 96-63 sq. in. (623 sq. cm.) lining area; gearbox, four-speed synchronesh (except first), ratios 7.059, 3.332, 1.711 and 1 to 1 forward, 7.059 to 1 reverse; driveshaft, two-piece open tubular with supported centre bearing and needle-roller-bearing universals; rear axle, spiral bevel gear with fully floating halfshafts, ratio 6.2 to 1 (5.43 to 1 optional).

BRAKES: Vacuum-assisted hydraulic with tandem master cylinder; total lining area 313 sq. in. (2,019 sq. cm.).

TYRES: 7.50-16 10-ply rating standard, 8.25-16 10-ply optional.

WHEELBASE: 161 in. (4.06 m.).

WEIGHT: Chassis and cab in taxation trim 2 tons 1 $\frac{1}{2}$  cwt. (2,121 kg.); dropside lorry ready for road 2 tons 13 $\frac{1}{2}$  cwt. (2,730.6 kg.).

PRICE: Chassis only, £517; complete dropside lorry £995.

contributor to general stability, while the appreciably lower unsprung weight is beneficial in limiting wear and tear, particularly in operation over poor surfaces. Cumulative effects are always evident when there has been a significant reduction in weight of any one major unit and in this case they have resulted in a diesel-powered 4-ton capacity vehicle with a chassis tare weight, ready for the road, of only 2 tons 1 cwt.

##### Tyre Costs Reduced

The way in which tyre costs are affected by the use of 16-in. equipment will vary in different types

##### Test Results

ROUTE: Standard route in Kent and Surrey with additions. CONDITIONS: Dry and rather cool.  
RUNNING WEIGHT: 6 tons 13 $\frac{1}{2}$  cwt. (6,795 kg.) plus crew of two.  
PAYLOAD: 4 tons (4,064.2 kg.).  
FUEL CONSUMPTION: Over 15-mile standard route 21.8 m.p.g. (7.7 km. per litre) at 25 m.p.h. (40 k.p.h.) average speed.  
GROSS TON/M.P.G.: 14.2 (44.2 tonnes/km./litre).  
PAYLOAD TON/M.P.G.: 87.2 (31.4 tonnes/km./litre).  
MAXIMUM GRADE CLIMBED: 1 in 41 (23.5 per cent).  
TURNING CIRCLE: 50 ft. 6 in. (15.4 m.) wheeltrack, 53 ft. (16.15 m.) sweep.  
ACCELERATION: Average of four runs in each case:  
Through gears:  
0-20 m.p.h. 11.2 sec.  
0-30 m.p.h. 26.2 sec.  
In top gear:  
10-20 m.p.h. 17 sec.  
10-30 m.p.h. 35 sec.

Braking: Average measured distance to stop from 30 m.p.h. on dry level surface 40 ft., equivalent to 24.2 ft. per sec. per sec. 0.75 g. overall deceleration.  
ESTIMATED TOP SPEED: 42 m.p.h. (67 k.p.h.).  
OVERALL FUEL CONSUMPTION: 164 miles of mainly hard driving, including 28 miles in London suburbs and many stops in various tests, 17.2 m.p.g. (611 km. per 100 litres).

acceleration times from rest to 20 and 30 m.p.h. of 11.2 and 26.2 sec. respectively were in fact slightly better than we obtained in an earlier test of the 3-tonner (running at about 8 cwt. lower gross weight) with the same (6.2 to 1) axle ratio over the same ground, though the top-gear acceleration times were rather longer with the heavier vehicle.

The new vehicle also returned better gross ton/m.p.g. and payload ton/m.p.g. figures over our usual 15-mile fuel-consumption run, possibly, as also with acceleration, partly a result of being more completely run in (the 4-tonner had already



Distinguishing features of the new bonneted Bedford 4-ton lorry compared with larger-capacity vehicles are 16-in. wheels and tyres, 6-in. narrower front wings and bumper and sidelamps in line with headlamp centres. Here the vehicle is seen at speed on a rough service road during our test.

of operation. Nonetheless it is a subject in which the manufacturer has been particularly interested during development of the new range. In extensive testing it is said that the 7.50-16 10-ply tyres have shown an improvement of 17 per cent in mileage covered compared with equivalent 20-in. tyres of the same make. Taking into account the lower cost of the smaller tyres, it is claimed that there is an overall reduction in tyre cost per ton-mile of payload of about 30 per cent.

An incidental effect of the use of smaller wheels is that it has permitted a narrowing of the front wings and bumper, with the advantage of greater mobility in congested areas. Distinguishable at a glance from the 5- to 7-ton normal-control Bedfords, the 4-ton and smaller vehicles have inset sidelamps in line with the headlamp centres instead of at a lower level in the wing and the width over the front bumper is about 6 ft. 3 in., some 6 in. less than on larger models. Otherwise the cab

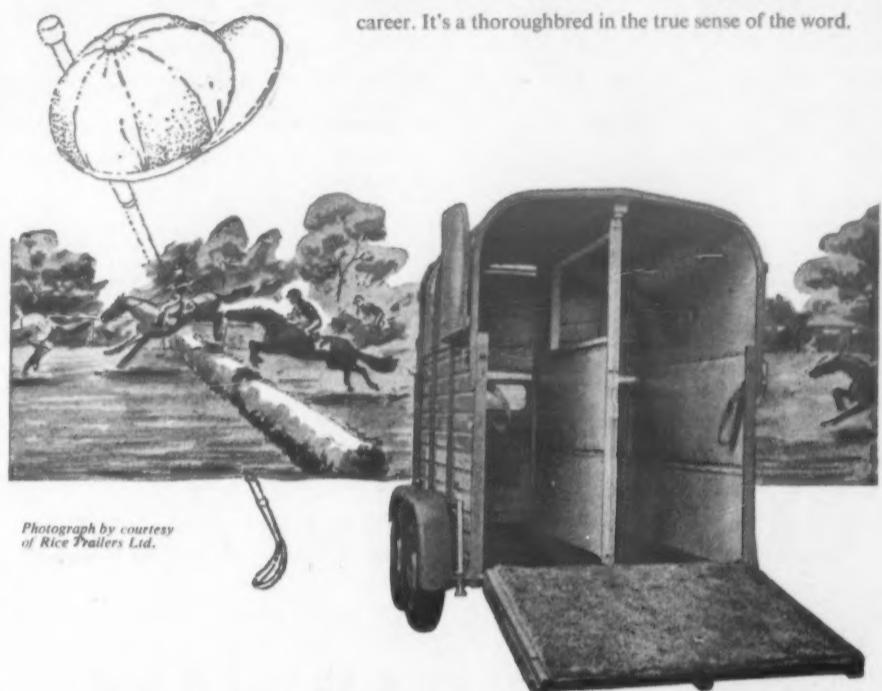
covered over 9,000 miles when tested) and the fact that ambient temperature was some 15 deg. F. higher. Conditions were rather more congested than usual for the fuel-consumption run over A25 between Limpsfield Common and Riverhead and this had the effect of reducing the average speed over the 15-mile return run from a normal 28 to 30 m.p.h. to 25 m.p.h. as well as necessitating four complete halts in traffic. Despite this, careful measurement showed a fuel consumption of 21.8 m.p.g., equivalent to a gross ton/m.p.g. figure of over 148.

This MODERN TRANSPORT test route is by no means an open main road but has been selected to give a fair indication of what a vehicle will do in actual all-day laden service on fairly congested interurban roads. It indicates that users of the new 4-ton Bedford who do not habitually overload and some of whose running is part loaded or empty can confidently expect returns of 22 m.p.g. or more on the shorter hauls and even better in open-

(Continued on page 13)

## Photo finish for the "Beaufort" trailer

One look at the superb "Beaufort" horse trailer shows the stylish finish obtained by using Birmabright aluminium alloy sheet for its construction. On the road it provides a light, strong, safe and economical means of transportation, and it will need little or no maintenance throughout its long career. It's a thoroughbred in the true sense of the word.



Photograph by courtesy of Rice Trailers Ltd.

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## Atkinsons say yes to Polyester!

with their handsome cab moulded from structural plastics



Cabs for commercial vehicles are ideally made of structural plastics. Atkinsons Ltd., of Walton-le-Dale, are now constructing the cabs of their diesel lorries with Beetle polyester resin/glass fibre, and the example shown—one of a fleet of new vehicles supplied to Robinson's Transport (New Worley)

Ltd.—fully exploits the advantages of structural plastics. The cab is of one-piece construction, giving lightness, strength, and durability. Any knocks or damage can be easily and cheaply repaired.

Atkinsons Ltd. now fit lighter, more durable cabs than hitherto, and the net weights of their vehicles are reduced with advantage to their payload capacity.

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MANCHESTER (2): 270/1 Royal Exchange Buildings.	Blackfriars 9287/9
BRISTOL (1): 61 Park St.	Bristol 25435/6

ARDROSSAN: (Ayrshire) Harbour Street, Ardrossan-Saltcoats 1911/2  
GLASGOW (C.2): 10 Bothwell St. City 6997/8  
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## UNILEVER COMPANIES

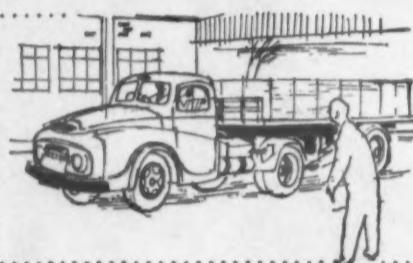
use

## BRITISH RAILWAYS

### Modern Freight Services

Unilever Companies transport many tons of their raw materials and finished products with the help of British Railways. There are more than 800 Express Freight trains time-tabled every weekday, many giving next morning arrivals over long distances. From many towns British Railways Export Express services give assured next-morning delivery for wagon-load traffic to London Docks (Royal, India & Millwall Groups), Merseyside, Manchester, Goole, Grimsby, Hull, Glasgow & Grangemouth. Charges are fully competitive: ask your local Goods Agent for details.

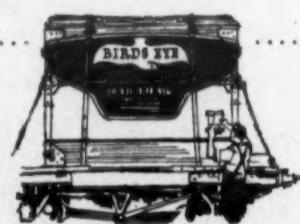
S.P.D. is the warehousing and distributing associate of Unilever Ltd. Many of its depots are connected with rail sidings and take delivery direct from British Railways pallet vans.



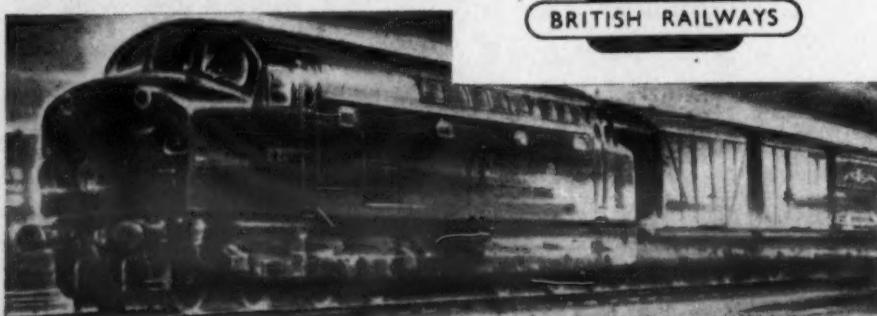
Van den Berghs & Jurgens Limited make a wide variety of margarines and cooking fats which are delivered by British Railways pallet vans to S.P.D. depots throughout the country. By using British Railways, Van den Berghs & Jurgens Limited, like other Unilever Companies, ensure that their products reach their destination quickly and safely.



Birds-Eye Foods Ltd. quick-freeze a variety of foods which are carried across the country in British Railways refrigerated containers specially designed for the purpose, ensuring that the foods are kept in perfect condition.



BRITISH RAILWAYS



### COMPANY MEETINGS

## BRITISH ELECTRIC TRACTION COMPANY, LIMITED

### Success of Independent Television Interests

### FURTHER PROGRESS FORESHADOWED: MR. H. C. DRAYTON'S REVIEW

THE 63rd annual general meeting of the British Electric Traction Co., Limited, was held on July 23 in London. Mr. H. C. Drayton, chairman of the company, in the course of his address, said:

#### Accounts

The group gross profit for the year at £4,615,000 shows an increase of £928,000 over the previous year. After deducting taxation the net profit is £2,658,000 against £1,883,000 last year, an increase of £775,000 on the year. The proportion attributable to your company is £2,286,000 as against £1,619,000 last year, or an increase of £667,000. Your directors are recommending the payment of a dividend of 35 per cent on the deferred stocks as against 25 per cent last year. If you will turn to the consolidated balance sheet you will notice that our general investments stand in the books at £27,225,000 split as to £18,467,000 quoted and £8,757,000 unquoted. The market value of the quoted is £38,365,000 and the directors' valuation of the unquoted is £16,343,000—a total valuation of £54,708,000 against the book value which I have already mentioned of £27,225,000.

The similar figures in the legal balance sheet give a book value of £8,115,000 for the quoted securities, with a value of £22,312,000, and the unquoted £2,095,000 with a valuation of £8,337,000. This valuation of £30,649,000 goes against a book cost of £10,210,000.

#### United Kingdom Bus Companies

The results of our bus companies in this country for the 12 months ended in March were better than those for the previous year, but these improved results are only comparative as, for the year to March, 1958, we had a serious setback as a result of the bus strike in that year. However, in October last, we had to meet a further wage increase of 7s. per week on the basic rates, and this, I would point out, followed an increase of 11s. only 15 months before. Each year since 1955 we have had a small decrease in the number of miles run and the passengers carried by our associated companies; in that period we have had to put in economies and trim a number of our routes which has not been in the interests either of our employees or of the public.

A short while ago, the trade unions presented yet further claims to the provincial bus companies, including a heavy increase for the wages of drivers operating one-man vehicles and for the reduction of normal working hours without loss of pay. I cannot for the life of me see why a one-man-operated vehicle should be entitled to the increase asked for, as any extra responsibility or work which may fall upon him does not justify such a claim. After all, there has got to be some relation between wages paid and the amount of work given in exchange. I have told you before that approximately 40 per cent of our route mileage is run at a loss, and if these fresh demands are granted, even in part, we should find it increasingly difficult to keep to the present level of our services, and in fact they would have to be reduced and consequently the number of men in employment would also have to be reduced. This demand for increased payments for the manning of one-man buses would have a serious effect upon the maintenance of a number of our unremunerative rural services.

#### Overseas Interests

For the year 1958, our Canadian subsidiary, Canadian Motorways, had a better year. The previous year we lost money, but during 1958 measures of reorganisation were introduced and are still continuing, with encouraging results. I am hopeful that when I meet you next year I shall be able to report that we are on a profit-earning basis.

In Jamaica our profits showed a considerable contraction in 1958 as a result of rising costs of operation and of further wage increase award. I must once more protest, not necessarily at the wage award, but that it should operate retrospectively from January 1, 1958.

Since the company was formed just over five years ago, costs of operation have increased by more than 30 per cent and wages cost by more than 60 per cent, yet we have managed to keep fares stable throughout that period. However, costs have reached such a height that it has made it imperative for us to apply for an increase in fares, but unfortunately the Jamaican authorities take their time in increasing such fares, and no power on earth can make any fare increase retrospective. The company's application was lodged in November, 1958, and has only just come up for hearing by the appropriate tribunal. We naturally hope that we shall be given permission to make the reasonable increase in fares for which we are asking, but retrospective dating of wage increases and the time taken to consider fare increases are likely to have an effect upon the attitude investors take towards Jamaica in the future.

For the year 1958 our African interests, which are managed by our friends United Transport Company of Chepstow, maintained their position. African Transport Co., Limited, paid the same dividend as in the previous years. The passenger transport companies reported increases in traffic and revenue. Towards the end of the year the group acquired Uganda Transport Company, a major long-distance operator in western Uganda.

Rhodesia United Transport, which has shown a remarkable growth since its formation, now expects to enter into a period of consolidation. We received a dividend at a higher rate on our increased investment than we had received on our smaller holding in the previous year, and we expect these good results to be at least maintained. The building of the Kariba Dam has been speeded up with the result that the benefits received from the road transport contract which is held by one of the companies in the group will be concentrated into a shorter period than had originally been expected. On the other hand, there has been a notable increase in the division which provides vehicles and transport management services to industrial firms under period contracts.

#### Other Interests

Since the close of our year on March 31 last, the preliminary figures of Associated-Rediffusion to April 30, 1959, have been published. The results for the year ending April 30, 1958, and the pre-

liminary results for April, 1959, are most satisfactory. As you are aware, it has not always been easy-going in this business, and we who were one of the pioneers had a rough passage when we started this new business, and it required both patience and courage to bring it to fruition. We are now beginning to reap the reward for the risks we took. Those risks should not be overlooked or minimised now that we are in smooth water.

The company has been conservative in its distribution of dividend, as it realises that to provide the proper services to viewers it is necessary to expend considerable sums upon research, upon the programmes offered to the viewers and also to the building and equipment of additional studios. It is only by having ample liquid resources that it can fulfil these obligations which it owes to the public.

Rediffusion Limited, in which we have a considerable holding, again had a successful year, and the profits of the company showed a most satisfactory increase.

Last year I ventured to prognosticate that the results of our subsidiary, Advance Laundries, for the year 1958 would be as good as the results for the previous year. As it turned out, the profit of Advance Laundries for 1958 showed a considerable further improvement, although the company did not pay an increased dividend as they had heavy demands for cash for the expansion and modernisation taking place within the Group.

Among our smaller undertakings, Eddison Plant has had a successful year. The company's original business was the hire of road rollers, but in recent years they have built up a division for the hire of contractors' plant which has been successful.

#### The Future

The Consolidated Group Profit for the year amounts to £4,615,000. Some years ago I thought it right and proper that shareholders should be possessed of the information as to where their income arose. To give you percentages based on that figure of £4,615,000 would be unsatisfactory as it only includes the interim dividend from our 50 per cent holding in Associated-Rediffusion. Therefore I want you to do a little sum. Out to that figure you must add £700,000, being the final dividend recently declared by Associated-Rediffusion, which comes direct to us; £210,000 for what we might normally expect to get from our American interests, that is Canada and Jamaica (and here let me warn you it is an estimate); £100,000 for, shall we say, a modest rise in the income from our general investments. Also, we think we can look for an increase from our laundries of about £140,000 of income. That brings us to a figure of £5,765,000, and here I must be quite categorical and say you must take these figures as estimates, as I am trying to build up a figure as a base to give you a percentage of where our profits are likely to arise. Taking that figure as, shall we say, a hope rather than an actual figure, the percentages work out as follows: 32 per cent from Bus businesses in England; 9 per cent from Rediffusion; 20 per cent from Associated-Rediffusion; 10 per cent from laundries; 5 per cent from our transport interests in Canada and Jamaica; 2 per cent from our transport interests in Africa; 2 per cent from Eddison Plant; and 20 per cent from our general investments.

After having been so courageous or reckless—I do not quite know which term should be used in giving you these figures—I am sure you will not expect me to say anything more about what I think the current year's results will be.

The report and accounts were adopted.

## FODENS LIMITED

### Mr. James Wild's Review

THE 57th annual general meeting of Fodens, Limited, was held on July 29 at Elsworth Works, Sandbach. Mr. James Wild, the Chairman, said in his report:

The year under review has been one of the most difficult since the end of the last war. Competition for orders both at home and abroad has been most fierce and profit margins have had to be cut drastically in order to obtain sufficient orders to keep the factory reasonably employed.

In the new financial year, our orders have taken a very marked upward surge and this has allowed us to increase our production of commercial vehicles. The removal of hire purchase and general credit restrictions has also been a most helpful factor in obtaining an increase in orders. We sincerely hope therefore that with all these helpful factors in our favour, it will soon be possible to increase production to the full factory capacity and to improve on the results of this year.

Every effort has been made to expand our export business and many countries have been visited in an effort to open up new markets for our products.

We consider that in view of the difficulties experienced by all commercial vehicle builders, our financial results are not unsatisfactory. As I have said, our sales and production have shown marked increases since the end of March, 1959. I believe that our products are the best available today and enjoy a reputation that is second to none and I am sure that we can view the future with reasonable confidence.

I would like to express our thanks to all our employees for the untiring support they have given during the year. The relations existing between the management and our work people are on a most satisfactory basis, and we are most fortunate in having such a loyal body to assist us.

The report was adopted.

### OFFICIAL NOTICE

#### CROSVILLE MOTOR SERVICES, LIMITED

##### GENERAL MANAGER

A GENERAL MANAGER will be required at the end of December next by this company which operates approximately 1,250 public service vehicles from headquarters in Chester.

Applicants should have had extensive experience in passenger road transport operations.

There is a contributory Pension Scheme.

Applications, setting out full particulars of age, present position, experience and indicating salary expected, to be submitted before August 31, 1959, marked "Private and Confidential," and addressed to the Chairman, Tilling Group Management Board, 10 Fleet Street, London, E.C.4.

[Other Official Notices on Page 6]

## OBSERVATION RAILCARS FOR S.N.C.F.

### Diesel-Electric Renault Units

FOR tourist service French Railways recently entrusted the Railway Division of Régie Renault with the study and construction of 10 800-h.p. diesel-electric railcars of a brand new type of which the first has just been completed. Weighing 58 tons, it can carry 88 passengers. The

made, the roof itself being made of transparent plastics. The passenger windows of the dome are fitted with built-in demisters. Where glazing is used it consists of two sheets of glass, separated by a transparent plastics membrane, in which there is an electric heating element. The drivers'



Renault 800-b.h.p. diesel-electric railcar with elevated first-class section for scenic S.N.C.F. routes

maximum intended speed is 80 m.p.h. The passenger compartment is divided into three sections. A compartment at each end at frame height holds 22 passengers; the central observation section above the engine compartment carries 44 passengers.

Special attention has been given to visibility and comfort. The observation dome has been specially

cabs at each end, the interior stairs, the fuel tanks, and air-conditioning ducts, are all made of plastics material by the Renault plant specialising in this work. Interior equipment includes reversible seats, arm rests with fitted ash-trays, fluorescent lighting and ventilators. The cars are air-conditioned throughout.

## Bedford 4-Ton Diesel Lorry on Test

(Continued from page 11)

road trunk haulage. About the worst fuel consumption to be expected in fully loaded frequent-stop operation confined to congested urban streets was shown in our overall check. In 104 miles of mainly hard driving, which included about 25 miles in the London suburbs and all the stopping and low-gear work in the acceleration, braking and hill-climbing trials, 17.2 m.p.g. was recorded.

Although the recommended gross weight of 15,000 lb. is normally about the limit for a 3½-litre four-stroke diesel engine if performance is not to be unduly restricted, it was found that the Bedford was well able to keep up with other traffic without any sense of being hard pressed. The wide engine speed range allied to the standard Bedford four-speed synchromesh gearbox and a 6.2 to 1 axle ratio gave a performance ranging from gradient ability of about 1 in 4 (an easy restart was made on the 1 in 4½ section of Succombe Hill) to a top speed of about 42 m.p.h. and a general willingness over our hilly route that was superior to some diesel-engined 3-tonners we have tried. The top speed might be considered rather low for some overseas or future domestic motorway service, but the alternative axle of 5.43 to 1 ratio improves the maximum speed to nearly 50 m.p.h. It is unlikely that many operators will want higher speed than this because of the steeply rising incidence of tyre and general wear in continuous high-speed running.

#### Brakes

Recent improvements to Bedford brakes have already been reported in our columns and the new 4-tonner has a generous specification providing a total of 313 sq. in. of lining area and a 5½-in. dia. vacuum servo cylinder. On the test vehicle this gave a progressive braking performance for light pedal pressures and in a series of simulated emergency stops on dry level tarmac the vehicle could be brought to a fully controlled stop from 30 m.p.h. in an average distance of 40 ft. from the point of first pressure on the pedal. In these stops Don meter readings were consistently in the region of 75 per cent and in fact the overall deceleration figure for 40 ft. from 30 m.p.h. also works out at 0.75 g. Fade resistance was also found to be high in our customary coasting run on Titsey Hill, when a hard application after heating the drums and linings by steady application on the half-mile downgrade produced a Don meter reading of 52 per cent. Recovery to the former cold-brake efficiency was complete when a further application was made after driving for about a mile at normal speed.

The Bedford normal-control 4-tonner represents a new class of vehicle in the British range and is

bound to attract the attention of operators who have had to compromise in meeting particular requirements. Its design removes a major cause of criticism of the forward-control layout for distributive work yet retains the advantages of good manoeuvrability and compact dimensions. But its field of application is not confined to local operation for it has the stamina for full-scale trunk service for the medium loads, which it can be counted on to perform with the economy of the average 3-ton vehicle. It is very good value indeed at under £1,000 for a complete diesel-engined 4-ton dropside lorry.

#### DOUBLE-DECK COACH

(Continued from page 7)

on the upper saloon ceiling results in a modified clerestory effect and there are translucent plastics panels in the centre section. Perlite solid rubber flooring is laid throughout.

In the toilet compartment there is a Vickers aircraft-type chemical closet, and in the servery a 3-gal. stainless steel insulated tea urn, a working table, storage cupboard and shelves for biscuits and sandwiches.

The Ribble Atlantean coach is 14 ft. 4 in. high and the prototype weighs 9 tons 18 cwt. unladen. The transmission system comprises Leyland centrifugal clutch and Pneumo-Cyclic gearbox, providing semi-automatic gearchange, and with a 3.083 to 1 back axle ratio top speed is 47 m.p.h. A higher back axle ratio would raise the maximum speed to about 55 m.p.h. and it is possible that the O680 150-b.h.p. engine may be fitted in future deliveries further to improve overall road performance.

#### CONTRACTORS' BUSES

RESULTING from complaints by members, the P.V.O.A. is again considering whether some form of control ought to be exercised over vehicles used by building and public works contractors. These vehicles normally pay a road fund tax of £12 10s. and they do not have to be licensed as public service vehicles or obtain a certificate of fitness. Members are asked to submit any information or details they have available on the following lines:

(1) The names of building, civil engineering contractors, etc., who are known to use passenger carrying vehicles (usually old buses or coaches) for the transport of their workpeople and, if possible, an estimate of the number of such vehicles used by each firm.

(2) Whether members have definite knowledge of cases where such vehicles have not been properly maintained or have been adapted in such a manner which would be regarded as detrimental to public safety and would not be permitted if they had obtained a certificate of fitness.

(3) Whether members have knowledge of any such vehicles being involved in accidents which can be attributed to the vehicles not having been maintained to the standards required for public service vehicles, or to them having been driven by unsuitable drivers, who are not required to have p.s.v. driving licences.

(4) Details of business lost by members, either on contract, stage carriage or express carriage services, as a result of public works contractors operating their own transport. Information will also be welcomed as to any cases where contractors' vehicles have been used at weekends for the transport of employees, their families and friends on excursions.

#### Forthcoming Events

August 23.—Historic Commercial Vehicle Club. Rally at Basildon New Town.

August 29.—Omnibus Society. Visit to Weymanns, Limited, Addlestone.

August 30.—Omnibus Society (North Western and Yorkshire). Study tour of Wrexham area independents.

September 7-13.—Society of British Aircraft Constructors. Flying display and exhibition. At Farnborough. (Public days September 11-13.)

September 12.—Railway and Canal Historical Society. Visit to Leeds and Liverpool Canal.

September 13.—Omnibus Society (Northern). Visit to United Automobile Services in Newcastle.

September 17-26.—International Motor Exhibition. At Frankfurt.

September 21-25.—Municipal Passenger Transport Association. Annual conference. At Edinburgh.

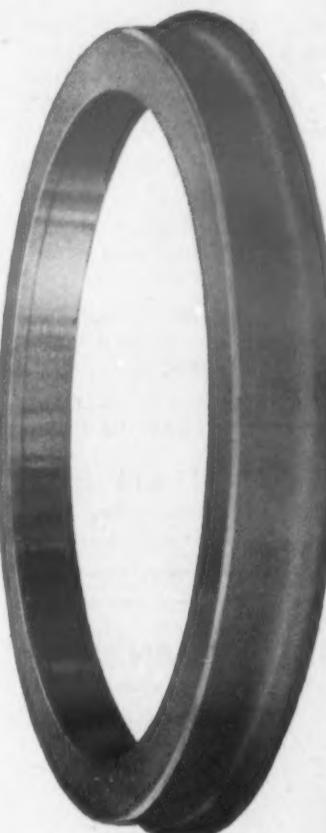
October 12.—Institute of Transport. Presidential address by Mr. R. G. Grout. At 66 Portland Place, W.1. 5.45 for 6.15 p.m.

October 12-16.—International Air Transport Association. Annual general meeting. In Tokyo.



### TYRES, WHEELS, AXLES, SPRINGS, FORGINGS

The use of tyres on electric and diesel locomotives and in passenger stock will still continue, in accordance with British Railways' plans. Steel, Peech & Tozer are one of the principal suppliers of these tyres, which they have been manufacturing for nearly 70 years. More arduous modern operating conditions call for tyres made from special quality steels: Steel, Peech & Tozer are supplying these in increasing quantities.



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## CARGO CONTAINER SHIPS

## Some Practical Considerations

THE cost of handling cargo in some areas has been estimated to be as high as 60 per cent of the total operating expenses of a ship. Recent new developments in ship cargo gear, terminal facilities and mechanical handling methods have increased efficiency somewhat, but far more basic changes will be necessary in order to make any appreciable reduction in this portion of the vessel's operating expenses, as the traditional limiting concepts of stevedoring remain generally unabated. With these observations Mr. D. A. Argyriadis, chief naval architect, McMullen and Nickum, Incorporated, recently introduced a paper to the Institution of Naval Architects in London.

Recent trends in the development of container ships, especially in the package trades, are beginning to show results, he said. The use of large shipping containers and trailer bodies as integral marine cargo units has been made at the expense of a sacrifice in conventional cargo hold cubic capacity. Nevertheless, the combined gains in stevedore labour, port time, packing, and cargo claims have more than offset this disadvantage. The transition from conventional methods of cargo transfer to transfer by cargo container will require careful analysis and planning. Certain initial premises can be made on which it will be possible to build a continuing analytical and development programme.

## Analysis of Handling Operations

The National Research Council of the National Academy of Sciences of the United States has made recent functional and economic analyses of cargo handling operations. These analyses have broken down the overall cargo operation, from receipt at terminal to storage in the ship, into segments in order to determine the costly bottlenecks, which are as follow:

- (1) Breaking bulk upon receipt at terminal.
- (2) Manual handling and rehandling of small packages.
- (3) Slinging and unslinging lots of small packages.
- (4) Spotting cargo in the hatch.
- (5) Horizontal and vertical movements of cargo inside the ship. The movement of cargo in and out of the wings

of cargo holds and tween decks is the costliest bottleneck of all.

## (6) Dunnaging and securing for sea.

The above analysis suggests the following improvements:

- (a) Increase the size of the cargo unit and maintain a constant size throughout the operation. This can be accomplished by using containers.
- (b) Eliminate break-bulk and rehandling by encouraging shippers and consignees to develop door-to-door container shipments.
- (c) Limit the movement of cargo inside the ship to one direction, unobstructed.
- (d) Design and rig a ship to handle its own containers in unobstructed unidirectional movements in and out of the

- (e) It must be strong enough to be able to be lifted when oaded, by a crane, at four points, without deflecting to an appreciable amount.
- (f) It must have male and female parts to interlock with other containers at specific points and/or the gantry crane spreader.
- (g) It must be stiff enough to withstand jerking of the lifting crane, and to allow for a maximum deflection of no more than say, 1 in. under the worst loading conditions.
- (h) It must be manufactured to accurate dimensions, so as to be similar to, and fit closely with, other containers.
- (i) It must have specially designed doors, that will withstand the shifting of cargo, and will not jam even during the worst possible movement of the vessel.
- (j) It must be designed as to lock easily in position, and be easily secured for road vehicles.
- (k) It must be suitable for rail, road and ship transport.
- (l) It must be of such a geometrical size and shape as to allow good storage possibilities, both on board and the shore.

## Internal Framing of Containers

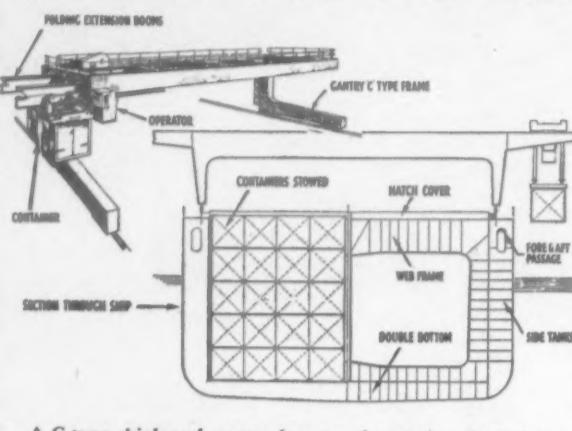
As a result, ship containers are manufactured on a frame and beam basis, with light material for sheathing of the outside and top. Both inside and outside framing has been and can be used. Inside framing may be more desirable for two main reasons:

- (a) It does not allow any protrusions that may cause the container to foul any other physical protrusion while loading and unloading.
- (b) It provides members on the inside of the container wherein interior lining can be fastened, should this prove necessary from the cargo protection point of view.

After lengthy studies have been made as to the best number of road trailer units required in relation to the total number of containers in employment it has been determined that about one road unit for every four containers should prove to be a reasonable ratio depending, of course, on the length of the sea voyage the containers are making; should this be an extremely long one, this ratio can be changed to 1:5 or 1:6 provided that the ship does not call at an unusually large number of ports during its voyage.

## Ship v. Shore Loading Equipment

Two main systems of loading and unloading containers are worthy of consideration, both employing the gantry crane, viz. ship installations and shore installations. Ship installations may well be somewhat more complicated than the shore variety. The first diagram (reproduced here) shows a novel C-type shipboard gantry frame which has some advantages over the conventional gantry crane and the second a section through a container ship while unloading.



A C-type shipboard gantry frame and a section through a container ship while unloading

ship's holds. This can be accomplished by lift-on, lift-off container ships.

## Container Requirements

A container for marine use must satisfy many requirements, the most important of which are:

- (a) It must be strong enough to withstand severe pounding and rolling of the ship and consequent movement of the cargo within the container.
- (b) It must be designed of a material not seriously affected by salt water and spray.
- (c) It must be weatherproof in the marine sense of the word.
- (d) It must be strong enough structurally to be able to carry three to four other loaded containers on its top.

Once the ship is ready for working the jibs of the crane are unfolded, and the operator moves the crane longitudinally to the approximate position required to lift the selected quayside container, and then the travelling bridge, including the spreader and the operator's cab, transversely over the exact spot where the container to be loaded on the ship is located. The spreaders are lowered over the container, and final adjustments are made so that the male locking devices of the spreader match exactly the female castings of the container. The container is then locked on the spreader and lifted off the pier. The bridge is moved transversely to the desired location carrying the container, and the gantry crane is then moved longitudinally to the unloading spot on the ship.

## Two-Way Working

As soon as the container rests in the hold the locking devices of the spreader are disengaged, the spreader is lifted free and the operation repeated. In most cases, loading and unloading operations can be combined, so that considerable time can be saved, but should the ship operate between two terminal points only, a shore installation of a gantry crane might prove more convenient and economical. During unloading and/or loading operations, the displacement, trim, and heel of the ship will change considerably. For this reason, gantry cranes for shipboard use must be designed so as to be able to operate under a variety of physical conditions.

In general (stated the author) this type of crane will be used for the handling of empty and loaded cargo containers or vans. It is intended that the crane should be capable of lifting a loaded container with a maximum weight of 67,200 lb. from a dolly or trailer at dockside, and depositing it in a predetermined storage space aboard the vessel, and vice versa. The crane will move athwartships fore and aft. The gantry structure should straddle the ship and should be of sufficient height, length, and width to clear the deck cargo and any other obstructions above the main deck. All structure and equipment of both the bridge and the gantry should be designed to withstand the severe conditions customarily encountered during a deep sea voyage, and to be capable of operation under a climatic range from arctic to tropical.

## Savings

A well-designed container ship has a container loading and unloading cycle of about four minutes, which would make it possible to load and unload a 10,000-ton deadweight ship in about 14 hours or less, as compared with a four- or five-day period needed to load and unload a conventional cargo ship of the same size. An example of the better utilisation resulting is given below for an imaginary trade route:

	Conventional ships	Container ships
Ship deadweight	10,000 tons	10,000 tons
Speed	10 kn.	10 kn.
Route distance	5,000 miles	5,000 miles
Sea time	10.00 days	10.00 days
Port time	16.97 days	6.97 days
Total time (round trip)	30 days	20 days
Round trips per year	12	18
Number of ships employed	8	2

This example shows that the employment of container ships in this particular trade route will produce such savings in ship operational costs as to release one vessel for operation on another route. However, one should also keep in mind that not all of the cargo being carried today on conventional cargo ships can be conveniently stored in a container.

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NORTH London, adjoining tube station, four miles from City. Extensive Distribution and Transport Depot. 30,000 sq. ft. Loft covered space on site of 2½ acres. Access to Great North Road. Freehold available. Early possession. Write Box No. 3814, MODERN TRANSPORT, 3-16 Woburn Place, London, W.C.1.

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shoulder region with protection from tread chipping caused by kerbing or backing on to ramps, ensuring maximum tread life.

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## SOCIAL AND PERSONAL

### Thornycroft Appointments

FOLLOWING his election last autumn as deputy chairman of John I. Thornycroft and Co., Limited, Lieut.-Commander J. W. Thornycroft, C.B.E., R.N. (Retd.), relinquished the post of managing director of Transport Equipment (Thornycroft), Limited, on July 31. He will continue as chairman and a director of this company. Mr. R. F. Newman, C.B.E., M.I.P.E., has succeeded him as managing director and has been elected a director of John I. Thornycroft and Co., Limited. Engineer Captain G. Villar, C.B.E., R.N. (Retd.), (19 years' service) and Mr. L. L. Holt (55 years' service), have retired from their executive positions as general manager and commercial manager of the Southampton works, and also from the board of John I. Thornycroft. Mr. Ian Cameron has been appointed general manager of this works from August 1, and Mr. F. B. Crabtree commercial manager from July 1.

\* \* \*

Mr. P. Wicks, a B.T.C. traffic costing officer at York, has transferred to Bristol.

\* \* \*

Mr. S. Vickerman, chief cartage assistant to the commercial officer, and in charge of 6,000 L.M.R. collection and delivery vehicles, has retired.

\* \* \*

Mr. S. E. Raymond, chief commercial manager, Scottish Region, B.R., has been appointed assistant general manager (traffic).

\* \* \*

Mr. G. B. Gray, M.A., M.Inst.T., who has been acting divisional traffic manager for the East Midlands area of the London Midland Region since January, has now been appointed to that post. His headquarters are in Nottingham. Mr. Gray, who was educated at Leeds Grammar School and St. Catherine's College, Cambridge, joined the former L.N.E.R. in 1932, and after training was appointed assistant to the district manager, Peterborough, in 1935. A year later he moved to the general manager's office, Kings Cross, as assistant to the industrial agent and between 1937 and 1948 he occupied positions on the L.N.E.R. as assistant to district manager, Nottingham (1937); assistant

### B.R.S. Divisional Manager

**B**RITISH Road Services announces the appointment of Mr. P. W. Swindells, M.B.E., at present deputy chief heavy haulage manager of the Pickfords Division, as divisional manager of the North Eastern Division in Leeds. He succeeds Mr. T. G. Gibb who, as recently announced, is to take up the appointment of general manager of British Road Services on October 1.

\* \* \*

The Minister of Transport has appointed Alderman R. F. Knight (Oxford) to be a new member of the Transport Users' Consultative Committee for the East Midland area.

\* \* \*

Mr. William C. S. Greig has moved from stationmaster at Glasgow Buchanan Street, to stationmaster at Glasgow Queen Street, Scottish Region, B.R.

\* \* \*

Mr. C. F. E. Harvey becomes assistant divisional traffic manager, London, Western Region, B.R., and Mr. W. Sidwell running and maintenance officer, divisional traffic manager's office, London.

\* \* \*

Mr. T. W. H. Gailey, director and general manager, Western and Southern National Omnibus Companies, has been appointed a member of the Tilling Group Management Board as from January 1, 1960.

\* \* \*

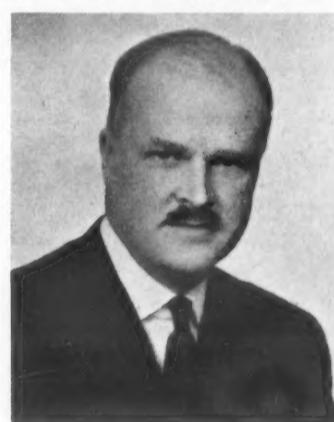
At his own request, Mr. R. I. H. Longman is relinquishing membership of the Tilling Group Management Board and certain chairmanships and directorships in the group companies on September 30. He will continue to be chairman and managing director of Wilts and Dorset Motor Services, Limited.

\* \* \*

Mr. H. A. Mugliston has been appointed divisional traffic manager for the Northern Division of the London Midland Region in place of Mr. G. B. Gray who has taken up a similar post in the East Midlands area. Mr. Mugliston will have his headquarters in Barrow-in-Furness. Educated at Clifton College, he joined the former



Mr. G. B. Gray



Mr. H. A. Mugliston

to district goods and docks manager, West Hartlepool (1939); acting assistant district goods manager, Leeds (1941); assistant district goods and passenger manager, Lincoln (1944); and assistant district goods manager, Manchester (1946). In 1948 Mr. Gray was appointed assistant district goods manager, North Eastern Region, B.R., and in 1949 acting district passenger manager, Leeds. The following year he became assistant district goods superintendent, Leeds, and a few months later was appointed district passenger superintendent, Newcastle. Mr. Gray went to Ireland in 1952 as general agent, Dublin, and in 1957 he became divisional traffic manager, Barrow.

\* \* \*

The honorary rank of lieutenant-colonel has been bestowed on Major A. N. Butland, O.B.E., E.R.D., B.A., B.Sc.(Eng.), M.I.C.E., who is relinquishing his commission in the Regular Army Reserve of Officers. He has reached the age limit of liability. Mr. Butland is chief civil engineer of the London Midland Region of British Railways.

\* \* \*

Mr. H. Brown, M.I.T.A., has been appointed traffic manager of the Metropolitan-Vickers Electrical Co., Limited. He joined Metropolitan-Vickers in June, 1956, being appointed assistant traffic manager (home) in September of that year. He had previously been with Ferranti, Limited, having been transport superintendent of its Avenue Works, Chadderton. He is a committee member of the Traders Road Transport Association.

\* \* \*

On the retirement of Mr. W. McKie, stores superintendent, North Eastern and Eastern Regions, British Railways, the existing bi-regional control of the stores department will be terminated and separate supplies organisations established in the two regions. Each regional organisation will be under the control of a supplies and contracts manager. Mr. O. R. Smart, principal assistant to the general manager, Eastern Region, has been appointed supplies and contracts manager in that region and Mr. H. Bell, principal assistant to the general manager, North Eastern Region, has been appointed supplies and contracts manager at York.

\* \* \*

At a function at Fishmongers Hall on July 29 the Worshipful Company of Carmen awarded its Viva Shield, gold medal and citation to the de Havilland Comet jet air liner as the most outstanding contribution to national transport improvement in the year 1958. The presentation was made by Mr. R. L. Cheesman, master, and it was received by Sir Aubrey Burke, chairman of the de Havilland enterprise, on behalf of all concerned, and the notable part played by Rolls-Royce, Limited, and by B.O.A.C. was recognised by the presence of Mr. J. D. Pearson, chief executive (aero-engine division) and Mr. W. T. Gill, financial director of Rolls-Royce, and Sir Gerard d'Erlanger, chairman of B.O.A.C. Present also as junior warden of the guild was Mr. R. W. Birch, chairman of B.E.T. companies. One of the most coveted American engineering honours, the Elmer A. Sperry Award, "for outstanding achievement in the field of transportation," will be presented for 1959 to the manufacturer of the Comet. Formal presentation of the award will take place in New York later this year at a joint meeting of the Institute of the Aeronautical Sciences and the Royal Aeronautical Society.

L.M.S.R. at Bristol in 1926 and after holding various posts at stations and district offices in the Bristol and Birmingham areas, attended the inaugural course at the L.M.S. School of Transport at Derby in 1938. Three years later Mr. Mugliston joined H.M. Forces in the Royal Engineers (Transportation Section), being demobilised in 1946 with the rank of lieut.-colonel. On his return to the railway service he was appointed successively goods agent at Evesham, Gloucester, and Liverpool, Edge Hill. He became assistant district traffic superintendent, Chester, in 1948, shipping traffic superintendent, Belfast, in 1952, and district goods manager, Liverpool, in 1958.

\* \* \*

Mr. E. Howell has been appointed district operating superintendent, Kings Cross, Eastern Region, B.R. He succeeds Mr. J. W. Christopher, who retired on July 17.

\* \* \*

Mr. E. C. Pugh, who has been deputy general manager of the West Monmouthshire Omnibus Board since 1956, has succeeded the late Mr. R. T. Brown (whose death is reported on page 1) as general manager.

\* \* \*

The London Midland Region announces that the following appointments have been made:

Mr. J. K. Firth, to be district goods manager, Birmingham.  
Mr. W. F. Beatty, to be new works officer, Euston.  
Mr. A. L. Owen, to be new works officer, Manchester.  
Mr. P. F. Shute, to be divisional signal engineer, Manchester.  
Mr. D. A. Harris, to be district engineer, Bangor.

\* \* \*

Mr. H. Eric Trist has resigned his position as managing director of Transport Brakes, Limited. Mr. Trist, the son of the late Mr. Hubert H. P. Trist, who founded the firm, had been with the company for 22 years and succeeded his father as managing director in 1954. Mr. Grahame H. Bird, son-in-law of the founder, has been appointed general manager of the company.

\* \* \*

Victoria coach and railway stations, Marylebone Station and London Airport figure in a weekly series of Home Service radio programmes beginning on August 19 which will explore, through the impressions of René Cutforth, the individual atmosphere and characters of well-known London locations to which people come to the end of their journey.

\* \* \*

The Institute of Transport has arranged a weekend course at Magdalen College, Oxford, from Friday, September 4 to Monday, September 7. Sir Reginald Wilson, immediate past president, will preside and the course will consist of lectures and discussions on "The Pattern of Future Demand for Public Inland Transport." The timetable will be as follows:

Friday, 8.30 p.m.: introductory address by Sir Reginald Wilson.

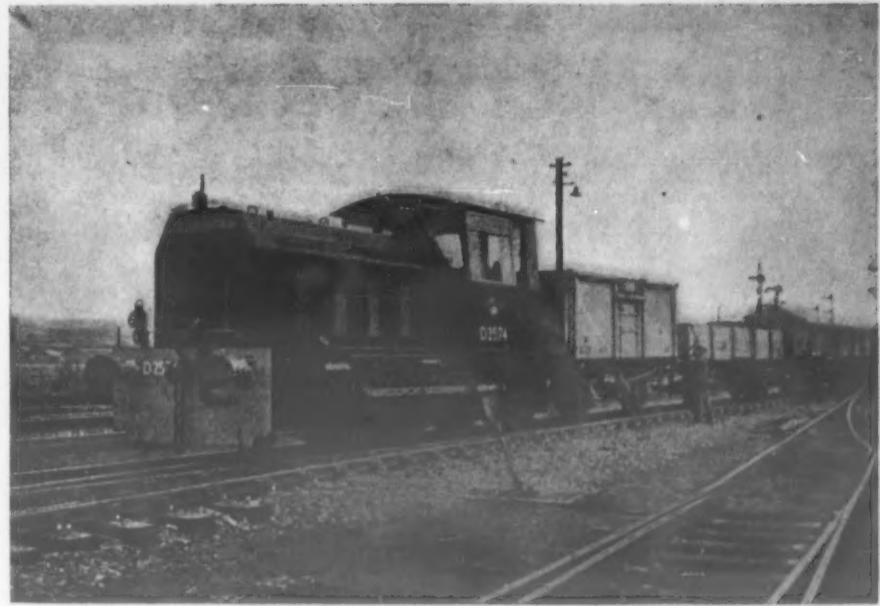
Saturday, 10 a.m.: "Demand Prospects for Passenger Transport by Rail and Road" by Mr. Charles F. Klapper, M.Inst.T., Editor, MODERN TRANSPORT.

Saturday, 5.30 p.m.: "Demand Prospects for Freight Transport by Rail and Road" by Mr. Martin Brown, M.Inst.T., director, S.P.D., Limited.

Sunday, 2.30 p.m.: "Comparative Costs of Road and Rail Transport" by Mr. D. M. Dear, director of costings, British Transport Commission.

Sunday, 5.30 p.m.: "The Future Supply of Public Transport" by D. L. Munby, M.A., reader in the economics and organisation of transport, University of Oxford.

Each lecture will be followed by discussion, both in groups and in open meeting. The course is open to members of all grades and to visitors. Participants will be accommodated in the college; there is, however, no accommodation for ladies.



## A new 204-h.p. 32-ton 0-6-0 diesel mechanical locomotive.

• • •

Built by The Hunslet Engine Co. Ltd. of Leeds, this new locomotive is in service on the Scottish Region of British Railways.

It is equipped with

WESTINGHOUSE

**STRAIGHT AIR BRAKE equipment for locomotive braking, a Westex Exhauster and auxiliary equipment, for operating the braking system on vacuum-braked rolling stock**

**A further 33 of these locomotives are on order**

Brakes designed and made in England by:-

**Westinghouse Brake & Signal Co. Ltd., 82 York Way, King's Cross, London, N.1**

India—Saxby & Farmer (India) Private Ltd., Calcutta  
Australia—Westinghouse Brake (Australia) Pty. Ltd., Concord West, N.S.W.  
South Africa—Westinghouse Brake & Signal Co. S.A. (Pty.) Ltd., Johannesburg  
Agents—Bellamy & Lambie, Johannesburg

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**IMPORTANT CONTRACTS****£1½ Million Cuban Bus Order**

**E**CONOMICAL and reliable service of 620 Leyland buses supplied to Havana, Cuba, eight years ago influenced the placing of a further contract with Leyland Motors, Limited, and Metropolitan-Cammell-Weymann, Limited, for a further 200 buses for operation in Havana by Omnibus Metropolitanos S.A. Valued at £1,500,000, the new order calls for 200 Leyland M.C.W. 44-seat integral Mark II Olympic single-deckers, featuring Leyland O680 underfloor diesel engines, fully automatic gearboxes of the Self-Changing Gear type, automatic chassis lubrication and special features and ventilation to suit Cuban requirements. Delivery is expected to start within a few weeks. There was strong competition for the order from American, German and Japanese manufacturers.

**Repeat Order for Westland Whirlwinds**

A repeat order for four Whirlwind helicopters, with supporting spares, to supplement six Whirlwinds already supplied to the Austrian Air Force, has recently been placed with Westland Aircraft, Limited, by the Austrian Government.

**Aeroflot Orders S.T.C. Equipment**

An order has recently been placed with Standard Telephones and Cables, Limited, by the Russian Purchasing Authority for airborne I.L.S.-V.O.R. equipment for installation in Aeroflot TU104 jet aircraft flying the Moscow-London route. It is similar to S.T.C. equipment fitted in B.O.A.C. Britannia and B.E.A. Viscount aircraft and operates in conjunction with ground facilities installed on air routes all over the world.

**Gold-Coated Windscreens for B.R.**

Triplex gold-coated glass has proved effective in preventing ice formation on windscreens of the Comet IV and other aircraft and ships and also of road vehicles working in the Arctic. As a result of successful trial service on locomotives, the Triplex Safety Glass Co., Limited, has now received orders for similar equipment for 500 electric and diesel-electric locomotives for British Railways.

**Railway Modernisation Contracts**

Contracts announced by the British Transport Commission in connection with modernisation include: The Drewry Car Co., Limited, for 32 power equipments for 200-h.p. diesel-mechanical shunting locomotives to be built at Swindon; British United Traction, Limited, for 34 230-h.p. power equipments for diesel multiple-unit vehicles and 17 control equipments for multiple-unit trailers to be built at Swindon for Hull-Liverpool inter-city services; Fuller Electric, Limited, for 134 booster transformers; Foster Transformers, Limited, for 150 booster transformers; W. C. Youngman, Limited, for 500 SW 1-ton containers; Ruston and Hornsby, Limited, for one 88-h.p. diesel-mechanical shunting locomotive.

**Recent Commer-Karrier Orders**

Recent orders placed with Commer Cars, Limited, cover 20 Karrier Bantam tractors for Hanson Haulage, Limited, supplied through Trinity Garage Company; 10 Karrier Gamecock refuse collectors for

Glasgow Corporation supplied through Melvin Motors; 50 Commer cab vans for Starlet Studios supplied through Anchor Motors; nine Commer 7-ton chassis for G. A. Barnborough supplied through Minories Garages; eight 7-tonners for English China Clays, Limited, supplied through St. Austell By-Pass Garage; and eight Commer f.c. 5-ton lorries and five 12-ton tractors for the National Coal Board supplied through Rootes, Limited, Manchester.

**Large Order for Tank Gearboxes**

An order for Centurion tank gearboxes worth £110,000 has been placed with David Brown Industries, Limited, by the Ministry of Supply. The gearbox provides five forward and two reverse speeds. Twin output shafts are coupled to final reduction gears driving the actual track sprockets. Steering of the tank is achieved through differential gears incorporated in the gearbox, the effect being to vary the relative rate of travel of the tracks.

**Leyland and Albion Orders**

Among recent orders placed with Leyland group companies are one for 20 Leyland Worldmaster single-deck bus chassis by the Spanish municipality of Seville and one for 28 single-deckers, partly Leyland Tiger Cubs and partly Albion Vitors and all fitted with Leyland O350 diesel engines, for Barbados Transport Board. The Tiger Cubs are to have fully automatic Pneumo-Cyclic transmission. The Albion order book also includes a contract for 16 Chieftain chassis for Tate and Lyle, Limited.

**TENDERS INVITED**

**T**HE following items are extracted from the Board of Trade Special Register Service of Information. Inquiries should be addressed, quoting reference number where given, to the Export Services Branch, Board of Trade, Lacon House, Theobalds Road, London, W.C.1.

**August 19—Ceylon.**—International Co-operation Administration for one 150-h.p. (or more) diesel ARTICULATED TRACTOR and 40,000-lb. capacity LOW-BED SEMI-TRAILER. Tenders to the Chairman, Tender Board, Ministry of Transport and Works, P.O. Box No. 547, Colombo, 1. (ESB/18114/59/ICA.)

**August 24—Korea.**—International Co-operation Administration for quantity of gravel-pit equipment including 2 ft. 6 in. TRACK, two diesel LOCOMOTIVES, 80 tipping WAGONS, two 10-ton tipping LORRIES and two crawler TRACTORS. Photocopies of tender documents from Export Services Branch, B.O.T., price 2s. (ESB/16409/59/ICA.)

**August 24—Sudan.**—Sudan Railways for 20 35-ft. long WAGON UNDERFRAMES. Tenders to the Controller of Stores, Sudan Railways, Atbara. (ESB/17376/59.)

**August 26—Belgian Congo.**—Government General for two FIRE-PUMP TENDERS and two personnel-equipment TENDERS, all petrol-engined heavy-duty four-wheel-drive type. Documents on loan from Export Services Branch, B.O.T. (ESB/15758/59.)

**August 28—Vietnam.**—International Co-operation Administration for 13 STATION WAGONS and 10 UTILITY TRUCKS, all petrol-engined. Tenders documents from the Vietnamese Embassy, 12 Victoria Road, London, W.8, quoting Invitation No. 749.00079. (ESB/18047/59/ICA.)

**August 28—Lebanon.**—International Co-operation Administration for two foam-generating AIRFIELD FIRE TENDERS. Photocopies of tender documents from Export Services Branch, B.O.T., price 2s. (ESB/13809/59/ICA.)

**September 1—India.**—Ministry of Railways for 26 items of LOCOMOTIVE TIRES and WHEEL CENTRES. Photocopies of tender documents from Export Services Branch, B.O.T., price 11s. (ESB/18156/59.)

**SHIPPING AND SHIPBUILDING****New Holland-America Flagship**

**T**HE Rotterdam, new flagship of the Holland-American Line, leaves Rotterdam on September 3 for her transatlantic maiden voyage to New York. The 38,600 gross ton liner has completed very successful trials in the North Sea; she has a speed of 20.5 knots and her engines develop a capacity of 35,000 horsepower. The Rotterdam will be the largest vessel in the Dutch merchant fleet and will be capable of carrying 1,400 passengers.

From the British viewpoint the vessel is of interest for the many advanced features in her construction and equipment, including the comprehensive navigational and steering control instrumentation, of which a large part has been supplied by the Sperry Gyroscope Co., Limited. No fewer than five steering control positions are provided in the wheelhouse area. These are incorporated in an interlocked system which precludes the use of more than one at any instant, although control may be switched from one steering position to another extremely rapidly. The main steering console in the centre of the wheelhouse provides two independent control points as an additional safety factor and from one of these automatic steering is available. This central console also provides true course, rudder order and rudder angle information.

Forward in the wheelhouse is the pilot's console, which incorporates the third steering position for both hand-electric and automatic steering through the medium of a lever control and in each bridge wing a special design bearing repeater column stand is provided, in which is incorporated an electric-steering control lever intended to be used when the vessel is carrying out final berthing manoeuvres. The basic navigational reference in the Rotterdam is a Sperry Mk. XIV gyro compass, and there is a Sperry Mk. 3 radar installation, providing duplicated large scale radar displays from a single large scanner, and the Sperry Lorran.

**Irish Dry Dock Got Ready**

**W**ORK has been started on the rehabilitation of the Haulbowline dry dock at Cork in anticipation of tankers arriving at the Cork oil refinery. The dry dock has not been in use for many years; it is 625 ft. in length and has an entrance breadth of 94 ft.

**Cunard Cargo Service to Gulf**

**T**HE Cunard Line is expanding its regular cargo service linking U.K. ports and Havre with the Gulf of Mexico. The service will in future be maintained by five ships. Two ships a month will sail from London, calling at Havre, for Gulf ports. One of these vessels will be available to load outward cargo from Liverpool and probably Manchester, and there will also be three sailings a month from Gulf ports to the United Kingdom. One of these will be a direct sailing to London and the other, en route to London, will cater for Liverpool and Manchester traffic. A third sailing will operate to Liverpool and Manchester. The new service will be maintained by two Cunard-chartered ships, one of which will be the *Irish Larch*, by the Brocklebank

liners *Manaar* and *Matra*, and by Brocklebank ships operating in the Calcutta-Gulf of Mexico-U.K. service. The two chartered ships will be replaced next year by two Cunard cargo ships which are now building.

**Enlarged Clyde Authority Area**

**T**HE Clyde Navigation Trust has provisionally agreed to contribute to the cost of the new graving dock at Greenock if a unified port authority is set up with control from Glasgow to the lower reaches of the river. The new authority would absorb the Greenock Harbour Trust and the Clyde Lighthouses Trust. This proposal was made in response to a request for help by the Inchgreen Investigating Company, representing the shipbuilding and shiprepairing interests who are sponsoring the dock project. The company's request followed the announcement on July 9 that the Government was prepared to help. A loan on attractive terms was envisaged if about a third of the capital required was raised locally. The revised estimate of the cost of building the dock and its ancillary repair wharves and plant is believed to be about £4½ million and the Government loan may be about £3 million. The Trust could not offer help for a project outside its sphere of jurisdiction, but this legal difficulty would be removed with the creation of a unified port authority, roughly on the lines suggested in the Cooper Report of 1945.

The Trust's unification proposal, approved on August 4 by 24 votes to six, stipulated that the new port authority would be self-supporting and that users of the port of Glasgow would not be prejudiced by uneconomic demands from any part of the unified area. A large graving dock was considered to be in the interests of the Clyde estuary as a whole. The prospects for the necessary legislation to permit of unification are considered promising.

**FINANCIAL RESULTS**

**N**OTES on the trading results, dividends and financial provisions of companies associated with the transport industry are contained in this feature, together with details of share issues, acquisitions and company formations or reorganisations.

**Provincial Traction**

A final dividend of 10 per cent by the Provincial Traction Company makes 15 per cent for 1958 on an increased capital (12½ per cent). A one-for-two scrip issue is also proposed. Group net profit is £33,027 (£13,328) after tax £27,451 (£16,759), depreciation £13,014 (£10,894), transfer to general reserve £13,000. Attributable to members of the holding company is £15,076 (£13,046).

**Guy Motors**

In the year ended July 31, 1958, Guy Motors, Limited, traded at a substantial loss and the half-year preference dividend is being paid out of reserves. Trading results were adversely affected by unexpected and unavoidable difficulties in obtaining components, which caused delay in the production of new models. These models did not contribute to the trading results until the last two months. In the last two months of the financial year the parent company traded at a small profit with the order position and production showing a favourable trend. The chairman adds that in view of the present satisfactory order position there is evidence that the improved trend should be maintained. The last dividend on the ordinary was 7½ per cent for 1958-57.

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fabrication. We can call upon the unequalled research facilities of the Aluminium Limited Group of Companies. At Banbury, England; Arvida, Quebec; Kingston, Ontario and Geneva, Switzerland, the Group maintains laboratories equipped with the newest techniques and staffed by skilled metallurgists, physicists, engineers, designers and chemists.

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Behind every pound of metal there is the backing of a million pound research programme.

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